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THE NEW Outlook FOR THE BLIND

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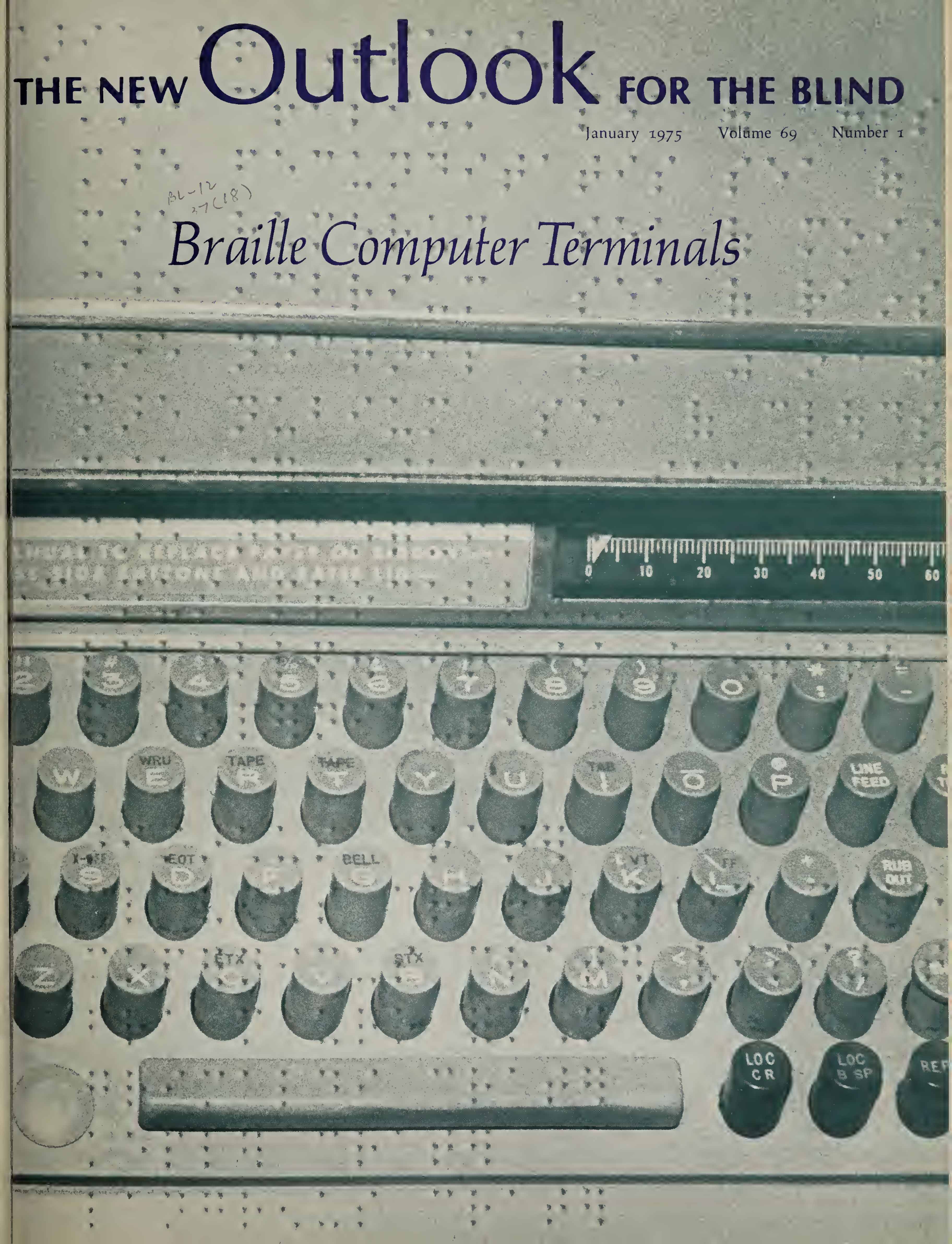
Braille Computer Terminals



THE NEW
Outlook
FOR THE BLIND

January 1975 Volume 69 Number 1

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The Braille Computer Terminal: Its Applications in Employment

GEORGE F. DALRYMPLE

Mr. Dalrymple is acting director of the Sensory Aids Evaluation and Development Center, Massachusetts Institute of Technology, Cambridge.

ABSTRACT: The production of braille simultaneously with print from a Teletype allows blind persons access to computers without sighted assistance. Jobs in which the use of the output from a Teletype is required are thus open to appropriately trained blind persons. The article includes explanations of the uses made of the braille-producing attachment by a mathematician, a systems programmer, a taxpayer service representative, and a newscaster. Modifications in the braille code necessitated by the system are also discussed.

Braille computer terminals can make jobs available for blind persons based upon remote access to time-shared computers. These jobs include computer programmer, reservationist, inventory management, credit control, taxpayer service representative, etc. In short, any job that enters, manipulates, or retrieves data or programs stored in a remote computer can now be filled by a blind person, if he is provided with a braille computer terminal and has the other necessary qualifications.

The Braille Computer Terminal

☐ What is a braille computer terminal? One example is the combination of a Teletype and a BRAILLEMBOSS, an MIT-developed braille page printer, or in other words, a Teletype that produces braille. In its most common configuration the BRAILLEMBOSS accepts appropriately coded Teletype signals and produces pages of braille copy in the same manner that the Teletype produces pages of print copy. A very similar device is the LED-120, manufactured by Triformation Systems, Inc.

Print and braille is produced

The BRAILLEMBOSS is an output device only; the keyboard and the electronics required for two-way communications are not included. A Teletype is generally included to make a complete computer terminal. When used this way the BRAILLEMBOSS echoes in braille the material produced in print on the Teletype page printer. This combination provides a terminal that can be used by either a sighted or blind employee; the computer terminal, therefore, need not stand idle when the blind user is performing other tasks that do not require access to the computer.

Employment Areas

☐ BRAILLEMBOSSES have proven useful in three employment related areas: 1) time-shared computer terminal for blind computer professionals; 2) access to computer-stored material; and 3) newswire. BRAILLEMBOSSES are also being used as the output devices for computer-based Grade II braille translation.

Use by a mathematician

The first BRAILLEMBOSS installed remote from MIT is still being used by Dr. John Morrison, a mathematician now at the Transportation Research Center, Department of Transportation, Cambridge, Massachusetts. After the initial three months of use of the BRAILLEMBOSS, Dr. Morrison reported:

> I have been involved in this type of work [the application of orbital mechanics to the determination of the motion of earth satellites] for ten years. By the nature of the work, it has been essential to program the results of my research on a computer for purposes of verification of the accuracy of the calculations, evaluation of the methods employed, and investigation of possible applications. As is not unusual, I have called in programmers to carry out the actual programming and running of the results on a computer. I have had to rely on others to at least scan the numerical output in order to keep abreast of progress. The whole procedure has been quite unsatisfactory. The effort, time, cost, red tape, and the inefficiency of the procedures have led, in practice, to laying aside possible fruitful avenues for investigation.
>
> *Direct access*
>
> With the advent of time-sharing capability, the situation has been completely altered. A scientist can now have direct access to the computer and almost zero turnaround time. However, for a blind scientist the time-sharing capability of computers is absolutely useless without a braille output device to reproduce the teletype output. It was my good fortune that, when the time-sharing facility became available to me, almost simultaneously, the MIT Brailler was put at my disposal for evaluation purposes.
>
> *Increased production*
>
> From a purely personal point of view, I cannot emphasize enough the almost unanticipated boost in morale the Brailler has afforded me. For the first time, I can access the computer directly and, for the first time, I can read the results of my labor. It is no exaggeration for me to say that, for the past three months, I have spent just about every waking moment either sitting at the Brailler and teletypewriter or preparing my next numerical experiment. Needless to say, I have not nearly exhausted the backlog, built up during the past ten years, of possible uses for the computer.
>
> From the point of view of a productive worker, my contribution to the in-house effort has kept pace with my colleagues, which would not have been the case had I not had the Brailler at my disposal. I consider it an indispensable instrument for my work. Should I be deprived of its use, my value to my employer would suffer commensurately.
>
> *Wide application*
>
> In my opinion, every possible effort should be made to ensure the development and further refinement of the MIT Brailler and its availability to all blind persons who can demonstrate a legitimate use for it. The potential uses for the Brailler are by no means limited to my particular applications. The least that can be said is that whatever is available to a sighted person through a teletypewriter is available to a blind person through the addition of a Brailler. This capability alone is sufficient to justify the development of the Brailler.

Four years later his attitude concerning the usefulness of the BRAILLEMBOSS has, if anything, intensified.

Systems Programmer

☐ The other BRAILLEMBOSS in Cambridge is being used by Alan Downing. As an undergraduate at MIT he was not content to have other students read his computer output to him or proofread his input. He made arrangements to use a BRAILLEMBOSS and Teletype located at the Sensory Aids Evaluation and Development Center and the time-sharing computer at MIT for his course work.

Part-time employment

During the summer between his junior and senior years he obtained employment at a local "software house" (contract computer programming company). This employment was contingent upon his being able to use a BRAILLEMBOSS; one was made available to him through an agreement with the Massachusetts Commission for the Blind wherein the BRAILLEMBOSS was transferred to the Commission and installed for his use. This employment continued on a part-time basis during his senior year.

After graduation he was employed by a major computer manufacturer. He is now responsible for maintaining and improving the FORTRAN and PLI compilers which he wrote for a large-scale computer. When he was asked for a statement on the BRAILLEMBOSS, Mr. Downing wrote:

> The MIT Braille Embosser has contributed significantly to my position in the computer field. I would say that, other than my technical education at MIT, it has been the largest single reason that I have been able to get this far. I have been told by my employer, in fact, that having an Embosser was significant in my being hired.
>
> *Limitations overcome*
>
> I do feel, however, that the Braille Embosser has some limitations. For example, the embosser is quite impractical for printing large quantities of material; whether it is a large core dump or just a large program. Also since the embosser prints with no special format, it does take some initiation to be proficient with it. This last problem is solved automatically when the user has had some experience with the machine. Also it is fairly trivial in most cases to supply the necessary software to produce correct format. Fortunately, for most of the applications required by a programmer, large dumps and large programs are fairly rare unless the user is a systems programmer, as in my case. I have found that, in my case, I have been able to overcome this drawback by other means which are working out satisfactorily. There is no reason, therefore, that a blind programmer cannot make adequate use of the embosser to become worthwhile on the job.
>
> *Embosser and Optacon*
>
> In the future, I am hoping that a blind programmer could be equipped with both an embosser and an Optacon. Between these two devices, there is practically nothing that a blind person cannot do within the same time-span as his sighted colleagues.

The experiences of Dr. Morrison and Mr. Downing are not unique. Most of the other people who have used the BRAILLEMBOSS in similar applications are continuing to use it.

The use of remote computer terminals is not limited to the computer professional. Computers are routinely used for many other applications, including computer-aided instruction, manipulation of data, and access and maintenance of records and files of all types.

Taxpayer Service Representative

☐ An example of access to computer-based records is that of Jack McSpadden, a blind Taxpayer Service Representative (TSR) with the Internal Revenue Service (IRS), Little Rock, Arkansas. The TSR function is to assist the public in obtaining information on the tax codes, rules, and regulations, and to answer questions concerning the taxpayer's individual records. At present most of the 40 or so braille-using TSR's cannot answer questions on the taxpayer's records unless they have sighted help to obtain the required data.

In most IRS regions the taxpayer records are now available on the Integrated Data Retrieval System (IDRS), a large regional computer system. Each district office in a region with IDRS has several Cathode Ray Tube (CRT), i.e., a television-like, displays on which lines of data are displayed for the sighted TSR. Each district office also has a Receive Only (RO) Teletype to provide a hard (print) copy that can be saved as needed.

Equalizes functioning

A BRAILLEMBOSS was connected to the RO Teletype so that a braille copy as well as a print copy could be made when requested. Mr. McSpadden now has access to a braille duplicate corresponding to the print copy of the sighted TSR's; his access to the entire data collection is only slightly slower than the other TSR's. Mr. McSpadden is an enthusiastic BRAILLEMBOSS user. He is reported by his supervisor to be performing all functions essentially as the other TSR's in that district office. It should be noted the BRAILLEMBOSS has removed the restriction of requiring sighted help and permits him to perform the total TSR function.

Newscaster

☐ A BRAILLEMBOSS has also been used by a newscaster. The wire service material was produced in braille by a BRAILLEMBOSS connected in parallel with the existing teleprinter at the station. In this installation the blind newscaster had his own braille copy of the newswire material and could prepare his portions of the newscast without requiring a sighted person to assist him.

Necessary Training

☐ Training a computer professional to use the BRAILLEMBOSS has been generally accomplished without difficulty in less than two hours, assuming that he must learn only how to use the BRAILLEMBOSS and the new braille code. Conventional English braille, either the letter-for-letter Grade I or the highly contracted Grade II forms are not directly usable with computers, as many of the symbols used in the ASCII or EBDIC character sets for computers are simply not defined in braille. Also several braille characters are ambiguous; e.g., both initial and close parentheses use the same symbol. Further, numbers are not directly defined in braille but use a number sign before the letters "a" through "j" to represent the numbers 1 through 0.

Braille system adapted

A new braille system was defined for use with the BRAILLEMBOSS when used with computers. Each symbol in the FORTRAN character set has a unique braille symbol defined in this system by computer programmers. This code, called "one-cell" braille, uses the same pattern as conventional braille for the alphabet. It uses the identical pattern for the numbers, defining the same bit arrangement as "a" through "j," but using the lower four dots of the cell.

The non-alphabetical and non-numerical symbols in the FORTRAN character set, =, +, −, *, /, (, and), are definitely the most important and are assigned the least ambiguous braille cells. Finally, the remaining characters used in the ASCII (Teletype) character set are arbitrarily assigned the remaining braille characters. This one-cell braille has a one-to-one correspondence between each printing character of the ASCII character set used in teletypes and the 63 possible printing characters in the braille cell. This allows any system based upon the ASCII transmission code to transmit Grade II braille since each braille symbol has a printing ASCII code to represent it. One-cell braille has also been defined with the five-level code used with newswire Teletypes but not with all the braille symbols represented; the same is true of the seven-level EBDIC used by IBM terminals which has only 62 printing braille characters.

The BRAILLEMBOSS has demonstrated that braille computer terminals can be the tool that opens the door to employment for many blind persons in those jobs in the modern world that are dependent upon rapid and convenient access to remote computers.

Glossary

ASCII (American Standard Code for Informat Interchange) The particular arrangement of on/off electrical signals used to transmit data between teletypewriters.

BRAILLEMBOSS The MIT braille page printer designed to emboss braille at similar or faster rates than teletypewriters; accepts electrical braille-coded signals from a variety of sources and in turn produces braille pages.

compile To translate a routine written in a source or programming language into a corresponding machine language routine.

compiler A routine that compiles a source language routine.

computer A device, usually an electronic machine, used for computing by means of stored instructions and information; it can rapidly perform complex calculations or compile, correlate, and select data.

computer terminal A teletypewriter or other specialized equipment used in a remote location to enable a programmer or operator to communicate with the computer.

dump 1. v. To copy the information contained in all or part of a storage. 2. n. The process usually proceeding from an internal storage to an external storage. 3. n. The mass of data resulting from a dump. 4. n. A computer output listing of the contents of the computer, typically several thousand or more characters, used to determine the exact state of the computer, usually as part of the effort to correct a malfunctioning program.

EBCDIC (Extended Binary Coded Decimal Interchange Code) The particular arrangement of on/off electrical signals used to transmit data between teletypewriters designed to IBM specifications.

format A particular order or arrangement of data.

FORTRAN (FORmula TRANslating system) Any of several procedure-oriented programming languages designed mainly for scientific or mathematical problems.

LED-120 A braille page printer, manufactured by Triformation Systems, Inc., similar in design and operation to the MIT BRAILLEMBOSS.

machine Any item of hardware used in data processing, particularly the central processing unit of a computer and, often, the units under its direct control.

machine instruction An instruction that can be directly decoded and executed by a machine.

machine language A language that can be directly interpreted by a machine, in particular, the language, peculiar in general to each machine, in which machine instructions are expressed.

Optacon (OPtical-to-TActile-CONverter) A reading aid which converts the image of a printed letter into a tacile image that a blind person can feel with one finger.

programming language An artificial language designed to be conveniently used by human beings in programming some class of problems.

programming language/1 (PL/1) A high-level programming language designed for application to a large class of problems.

routine A sequence of instructions designed to accomplish some result, often one that is generalized or of frequent use; a computer program.

software 1. Any of the specially prepared routines designed to optimize the operation of a digital computer installation, including programmer aids (such as assemblers, processors, library routines, etc.) and more complex programs such as operating systems that, to a large extent, manage the entire installation. 2. Any of the manuals, circuit diagrams, logic diagrams, or other documents associated with a computer.

software house A company through which computer programs are written and/or maintained on a contract or purchase order basis.

Teletype (Trademark) 1. n. A form of teletypewriter. 2. v. Communication by means of a Teletype.

teletypewriter A form of telegraph in which the receiver prints messages typed on the keyboard (like that of a typewriter) of the transmitter; the striking of the keys produces electrical impulses that cause the corresponding keys on the receiver to register.

time sharing A system permitting the simultaneous employment of a computer or computer complex by many users at remote locations for solving their individual problems in real time.

turnaround time The time that elapses between the submission of a job to a data processing installation and the return of the results.

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(Continued on page 10.)

Four Years' Use of the Binaural Sensory Aid

**WALTER THORNTON,
O.B.E., M.R.S.T., B.A.**

Mr. Thornton, co-founder of the National Mobility Centre in the United Kingdom, is chairman of its Advisory Committee.

ABSTRACT: After using the binaural sensory aid in conjunction with the long cane for years, the writer feels that his orientation and mobility have improved, that he experiences less stress and is therefore more willing to cope with travel situations he would previously have avoided, and that he has developed to some extent the ability to interpret the device's signals (to determine what object causes a particular auditory signal). He believes that a new model of the aid, Mark II, currently undergoing field tests, is superior to the various models of Mark I and that the binaural sensory aid, while not the perfect solution to all the mobility problems of blind people, is a successful mobility aid and environmental sensor.

In an article in the *New Outlook*, December 1971, entitled "The Binaural Sensor as a Mobility Aid," this writer drew attention to the significance of the binaural sensory aid, as it is now called, and expressed certain views about its potential. Now, after three years have gone by, it may be of value to discuss the experience of four years' daily use of this device in conjunction with the long cane and present up-to-date information concerning the aid and its workability.

The Evaluation Program

☐ A four-nation evaluation program (carried out primarily during 1971 and 1972) in which blind persons used the device over a period of time included participants from the United States, Australia, New Zealand, and Great Britain. As in the other countries, the British program validated the concept of the device as a mobility aid and environmental sensor. It demonstrated the viability of its use in conjunction with the long cane, but pointed out that the present model needed further development through engineering.

Rated acceptable

Even in its present form, however, the binaural sensory aid was shown to be acceptable to a good proportion of the approximately 150 blind persons who tested it: a high percentage—about 50 in the United States and over 70 in the United Kingdom—continued to use it when the evaluation period had ended. The writer's view is that the percentage of the blind population likely to want to utilize the binaural sensory aid will probably not exceed two percent in the developed countries; however, this is a significant proportion. The fact that Mark II, a new model currently undergoing field tests around the world, is a considerable improvement over Mark I, the tested model, increases the likelihood of the device's acceptability.

Personal experience

Using various models of the binaural sensory aid, the writer has walked more than 5,000 miles without a companion under widely differing conditions, in a variety of countries, often over unfamiliar terrain. The prototype (Mark II) used daily by the writer over the last 10 weeks has consistently proved superior in every respect to the various models of Mark I tested over the four-year period.

Mark II

☐ Although the crucial qualities of durability and reliability in sustained operation under realistic conditions can only be demonstrated through prolonged use in the field, the tested Mark II units warrant the expectation that these vital criteria will be satisfied. First and foremost among the advantages of Mark II are the greater comfort and convenience of a better fitting spectacle frame with folding sides and a detachable and truly flexible lead connecting with the power supply and control box. The redesigning of the control box and rechargeable battery make the unit much more convenient for carrying; both this unit and the frame itself, which can fit into a small case, are small enough to go into a pocket or lady's handbag. The overall reduction in weight is 20 percent. In addition, the single pull-up knob control, which turns clockwise to increase signal volume, is a great improvement over the two switches and counterclockwise-turning knob of Mark I.

Improvements

Electronically, Mark II represents a considerable step forward, evident in the better quality of the signals and more silent functioning of the device. The integrated circuit modules should mean greater reliability and facilitate any maintenance work or repairs that may be necessary. The two-battery charger has been improved by having been made automatic: it switches off when the batteries are fully recharged. In addition, it can indicate audibly whether or not the recharging process has been completed. Moreover, Mark II represents a real advance cosmetically, and a better, more individual fitting of the spectacle frame is promised in the near future by the manufacturers.

Signal Feeders

☐ There has been over the last four years a continuing quest for better signal feeders, and numerous types, both standard and experimental, have been tried. At first, because of the not entirely satisfactory fit of the spectacle frame with fixed sides, there seemed to be a need for custom-made ear molds with both retaining quality and the capacity to maintain their own position to ensure control of the direction of the signals. However, none of the ear mold types of signal feeders proved completely satisfactory. Problems included discomfort, pressure on the ear, and some occlusion, though often slight, of ambient sound. One type of ear mold even distorted the direction of ambient sounds.

Ear molds

Acoustic tubing

The signal feeders now preferred are much cheaper and simpler than the ear molds. They consist of acoustic tubing with a "U" bend molded into it by heat treatment and plastic terminators resting in the conch that direct the stream of signals into the meatus; the direction of the signals is controlled by the acoustic tubing resting in the tragal groove. The plastic terminators are available to suit individual taste, facilitate cleanliness and hygiene, and have the important advantages of doing away with pressure on the ear and occlusion of ambient sound.

Mobility Aid

☐ Several facts concerning the role of the binaural sensory aid in mobility have been established or confirmed during the evaluation period. As a mobility aid, it is a supplement to the long cane, extending protection, increasing the orientation options, and facilitating clear path travel. However, it gives practically no protection against drop offs or low obstacles and can have an added disadvantage in that preoccupation with its auditory signals can lead to inadequate attention to ambient sounds and other natural orientation and direction clues, resulting in disorientation and risk to personal safety. Thus to avoid misuse

Disadvantages

Necessity of good skills

of the device it is imperative that the user develop to the fullest extent all his natural sensory abilities. Basic skills training and reasonably adept use of the long cane must precede training with the binaural sensory aid.

Raises standards

This view of the binaural sensory aid as a supplementary device does not in any way imply that its role is an inferior one. The device makes a fundamental contribution toward optimal mobility performance, extending the individual's potential for good mobility and raising the standards of mobility for blind persons nearer to that of the sighted—the ultimate goal of mobility training. In addition, use of a new and effective aid has motivated blind persons to explore unknown environments, to undertake tasks that were previously avoided, and to experience mobility for its own sake, to walk for pleasure and exercise.

Greater awareness, less stress

The binaural sensory aid allows the user to be aware of his environment in a manner not otherwise possible and thus to build up and maintain a more accurate and detailed picture of his surroundings than he has had hitherto. There is also a natural reduction of stress when the ability to sense the environment improves. (Here the writer would like to emphasize from his own experience the importance of not allowing long cane technique to regress because of the sense of greater protection and earlier warning regarding obstacles afforded by the aid. It is necessary to remain appreciative of the fact that greater information at upper body level is not matched by greater information at ground and lower body level.)

Need for experience

Participants in the British program demonstrated that it is a comparatively simple process to use the device to locate objects to serve as landmarks. However, the capacity to interpret the signals in order to identify the objects that produced them calls for vast experience. The blind person must be prepared to increase his competence by regular, sustained use of the binaural sensory aid. (Although, for this reason, it is unlikely that sighted instructors will achieve anything like the facility of recognition reached by the highly motivated blind user, instruction—based on a real conviction of the worth of the device—can provide the fundamental skills so long as the user is willing to devote the necessary time to practice.) This writer would summarize the fundamental skills associated with use of the aid as localization, recognition of relationships between pitch and distance, shorelining, the ability to identify the environment through auditory signals, and the ability to make maximum use of natural clues and not rely totally upon the device.

Fundamental skills

Signal levels

Related to the latter skill, that of maintaining use of natural clues, is the need to keep signals at the appropriate level to ensure correct direction and safety. If auditory signals at any time interfere with perception of ambient sounds, the user's safety may be at risk. Inevitably, in the early stages of training, persons using the binaural sensory aid maintain signal strength at too high a level for fear that they will fail to hear some of the signals. The correction of this tendency is of prime concern in the training course, as is prevention of the regression of other orientation and mobility skills as the user comes to depend more and more upon the binaural sensory aid.

Personal Summary

☐ To summarize the writer's feelings after four years' use of the binaural sensory aid in conjunction with the long cane, he considers the personal benefits to be these: improved orientation and mobility; reduction of travel stress, resulting in a generally more relaxed attitude; increased incentive to take daily walks for the purpose of exercise; a greater readiness to tackle mobility situations previusly avoided; and some improvement in the ability to interpret the device's signals to determine the objects producing them. Moreover, he has acquired in a relatively short time (since June 1970) a more accurate and detailed picture of the new district in which he lives than he had of the area he lived in the previous 25 years.

One of the most exciting aspects of using the binaural sensory aid is the development of the abiltiy, as mentioned above, to interpret the device's signals. If the writer, in adult life, taking up the device when well over the age of 50, can achieve some measure of success in this direction, how much more may well be possible for young people growing up with the aid?

Although the binaural sensory aid is not, by itself or used in conjunction with other equipment, the complete answer to the mobility problems of blind people, nevertheless, in the writer's view, it does represent progress in the right direction.

The Braille Computer Terminal—*Continued from page 6.*

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A Personal Approach to Teaching Braille Reading to Youths and Adults

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ABSTRACT: The emphasis in this four-phase approach to teaching braille is on the development of good reading skills, especially movement and the use of context. Contractions and signs are introduced as they occur in reading materials. Few special texts are used since there is greater interest in learning to read meaningful material—stories, songs, etc., rather than word lists or sentence fragments. The teaching methods are described in detail. The writing of braille is only taught in the later lessons.

Underlying philosophy

The most obvious physical factor in rapid braille reading is rapid movement. I believe teachers should work toward good movement from their first teaching efforts, but unfortunately the texts that are currently available for beginning braille reading for adults do not encourage movement. The exercises require examination of single configurations and sometimes identification of individual dots. As words are introduced, they are to be spelled out, one configuration at a time. Later, sentences require the same method, since no deliberate repetition of words is incorporated to make it possible to recognize units larger than the individual configuration. There is no sequence to the first groups of sentences, so the reader not only receives no help from context clues, but cannot be taught to use these valuable reading aids.

Present approach challenged

I question the theory of those adult primers which present the alphabet first, followed by contractions according to their logical groupings, as if there were some virtue in knowing all the whole-word alphabet contractions, for example, before learning any others. Other primers choose certain letters, their whole-word contractions, and the short-form words containing those letters, and group these configurations in a lesson. In both these cases, the contractions or letters control the vocabulary. I object to the resulting series of unrelated practice sentences, composed in stilted language in order to include the new set of letters and/or contractions. The individual braille configuration is still the basic unit which the reader must decipher. Good movement cannot be developed with such materials. My very first lessons that are actually in braille (there may be some preliminary tactile training) require movement, and my technique grows out of a desire to demand movement.

Teaching Procedures—Phase One

☐ *Phase I: Short Episodes.* For beginning reading, I braille simple "stories," episodes, or sequences of related information on subjects of interest to the readers. I use heavyweight braille paper, because it produces the clearest dots, with both words and lines double-spaced. The double spacing eliminates two obvious sources of confusion for the beginner—running words together and moving to the wrong line. Each sentence is no more than one line long, and each sentence is on a separate line. I use no punctuation at first, but use the capital dot with the pronoun "I" and with names, since it will always be a part of these words. The vocabulary is limited, simple but adult, and repetitive.

Contractions included

The short episodes or sequences of related information provide interest and allow context clues to aid the fingers. I write such sequences using any contractions that happen to be needed within the limitations I impose on the vocabulary. Sentences are certainly not fascinating at first, and I explain to the students that limiting vocabulary makes this so; the sentences do, however, form a unit that provides *reading* experience, not just spelling. I deliberately use words of varying length, so that length can be a clue to recognition of individual words as they are repeated. The sentences soon become more interesting as vocabulary increases.

Movement emphasized

Obviously, the beginning student cannot start reading independently in his first encounter with braille. I use procedures with adults that are very similar to those used in teaching sighted children to read "experience charts." Students have previously learned to follow lines, using both hands and all but the little fingers and thumbs, and to move to new lines, without any attempt to understand what is under their fingers. They can then follow slowly, but always moving, as I read the new material to them. We read eight to ten lines of new material, then go back over it, this time pointing out distinctive words and perhaps letters, and explaining the structure of any contractions used, but always speaking of word and letter "shapes" rather than dot structure. We notice words that are very "full" (e.g., "though") contrasted with those more "open" (e.g., "along"). We notice distinctive slants, as in an "ei" or "ie" combination. The students do know the dot structure of a cell, and if they observe that dot four is missing in a certain configuration, that is fine, but I try not to emphasize individual dots.

Other figures used

From the beginning, I ask students to try to get clues from the ring and middle fingers of the right hand. At first all they can do is judge the length of the word in this way, but they can get that while the more sensitive pointer fingers are doing the actual recognition. Later, I have them lift the pointer fingers at times, and read without them, to help sensitize the other fingers so that they can assist more actively in recognition. I have not done enough with this as yet to make any definite claims concerning its value, but students have been able to read without using the pointer fingers, and the technique seems to be potentially important for later rapid reading.

Verbalizing

☐ After one or two "readings" that are really "followings," the students are ready to try the passage themselves. In a small group, I have them all read aloud together. One may contribute the first few words, another the next, and they stimulate each other in completing sentences. I encourage them to talk aloud even as they figure out a word, because one will contribute the first syllable, someone else get the rest of the word. They make it a more successful experience for each other, and I therefore prefer a group or even a pair to one individual working alone. On the other hand, in a large group there is likely to be too much range in ability, and it is hard to keep the slow ones encouraged and the fast ones interested. The teacher might start with a large group, then divide it into smaller ones as soon as the spread of ability becomes evident.

Use of context

When all the students "get stuck" on the same word, I give them only a few seconds to figure it out. More time than that inevitably leads to dot scrubbing. I suggest that they try the next word or two to see if the context will help with the problem word. If that fails, I tell them the word, and try to point out something distinctive about it. Sometimes we just decide it's a hard word and leave it at that, assuming they will be able to recognize it better at a later time when their touch has become more refined.

Reading whole words

I urge that they always read a total word even if they don't recognize the beginning configurations. Sometimes the best clue is at the end of the word. If they still cannot recognize the word, they should go back over all of it, from left to right, and not just try to identify dots in the first configuration. If they do recognize the first few letters and know the length of a word, I encourage them to make a reasonable guess about the rest, then verify with the fingers before saying it. All good readers, print or braille, read many words after recognizing just a few letters in them.

The students are not expected to memorize every word or configuration encountered in a passage, but to have a reading experience which reinforces their vocabulary of letters and words and adds some new ones each time—perhaps some different new ones for each student. This goal makes it possible to give each one a successful experience with every lesson.

Familiar Material

☐ *Phase II: Familiar Songs and Poetry.* As soon as the students have developed a little skill, I start interspersing the pages of new materials with the words of songs that they know, using popular or folk songs with repetitive words. ("If I Had A Hammer" is a good one.) The students suggest songs themselves and help decide which will be appropriate at their level of competence. Reading familiar materials gives a rest from "figuring out" new sentences and brings good movement back if it has slowed down. I use this device frequently. If the students happen to like poetry, I use familiar poems. If they are religiously inclined, I use favorite Psalms. With children, I use nursery rhymes.

New words

If a new page of material happens to have few new words, I may not read it to the students first, but tell them what new items to expect and let them try the passage "from scratch." I lean more and more, however, to having them follow as I read, if the material is new, so that they encounter new words as units under fingers in horizontal motion. Our last reading of a passage is usually a "following" too, again to emphasize the importance of movement. My first reading of a passage is always slow, but in logical phrases. I watch the students' hands and pace my reading to what seems to give them reasonably comfortable perception. My final re-reading deliberately pushes them a little.

Punctuation marks

With my last student group, composed of bright university students, I introduced the capital sign and the period on page 20 of our material, in the words of a song. Older people, less oriented to learning new concepts, might find that much too soon. Each new feature of braille must be introduced as the teacher feels the students are ready for it. I introduced additional punctuation gradually, often in songs, because the text made obvious the need for a question mark or exclamation point.

When punctuation marks are introduced, the teacher can help the student to be aware of them as reading clues. For example, after a period, question mark, or exclamation point, expect a capital dot and mentally eliminate it in reading the following word, so that you don't take a capital "b" for an "ar" sign. I do not think that the less common punctuation marks—inner quotes, for example—need to be presented until the student is reading material in which they naturally occur. If he drills them briefly, then does not encounter them again, he will forget them anyway. I would introduce them before the end of the reading lessons if they had not been met by that time, so he would be aware that there is a braille equivalent for the printed mark, but in the early lessons I see no reason to work on signs which occur seldom in everyday reading.

Return to normal spacing

The practice of double spacing between words may be discontinued whenever the teacher judges the students to be ready for normal spacing. It does not take long for them to reach this point if they are achieving success in their early lessons. Double line-spacing should be continued longer, until the student is reading comfortably a wide range of words and configurations, all the common punctuation marks, and is reading sentences that do not end at the end of each line. Then, I find, he moves very readily to regular line-spacing. More will be said about this later.

I have indicated that I do not introduce contractions systematically in the early lessons. I do keep track of which contractions have been presented, and make sure that all contractions appear in the reading material as the student progresses. As contractions or their letter groupings are encountered in the new situations, I explain the reason for the use or non-use of the contraction.

First Books

☐ *Phase III: First Books.* Moving from short episodes to longer units presents a problem. Adult books are too long to provide the satisfaction of completing a task that the episodes and songs have given. Adult short stories are too difficult. I tried something with my last group that they have enjoyed greatly. I thought of books that my husband and I had enjoyed ourselves, as we read them aloud to our children during bedtime story hours. I looked over dozens of these, and from among them chose several that had simple, quite repetitive vocabularies, but good story lines, and that were well written. I transcribed these into braille, using only the punctuation the students knew at that point, and still using double line-spacing through the first books. *The Biggest Bear,* by Lynd Ward, followed by *Blueberries for Sal* and *One Morning in Maine,* by Robert McCloskey, made an excellent sequence. Each had some rather specialized vocabulary—clams, fish hawks, and sea gulls appear in the McCloskey books—but the words were repeated frequently so the students soon learned them, along with much everyday, useful vocabulary. *Wee Gillis,* by Munro Leaf, was another story these adult students enjoyed.

Suggested titles

We actually moved to single line-spacing after reading *One Morning in Maine.* I re-brailled some pages of it in normal spacing, and we practiced moving from one line to the next, drilling just the movement until everyone was finding new lines comfortably, accurately, and rapidly.

Place-keeping

One young woman was able to describe exactly how she kept her place as she moved to a new line, and her description was helpful to some of the others. She said that instead of going back *across* the braille line, she was guided by the *bottoms* of the braille characters, and the space below them between lines.

Incidentally, this student has no feeling in the pointer and middle fingers of either hand, and reads with the ring and little fingers, holding her arms with the elbows approximately forming right angles, so that the ring and little fingers fall straight on the braille line, the other fingers and thumbs relaxed lower on the page. It took me some time not to feel, as I glanced at her hands, that she was on the wrong line. She has been one of the best readers in the group.

Quotation marks and italics

One Morning in Maine gave the students their first experience with quotation marks and italics. After they had read the whole story without them, I re-brailled some of the pages that included a lot of conversation, this time inserting quotation marks. There are some excellent uses of italics in the book, too, and after quotation marks were being read comfortably, I re-wrote some pages to introduce the italics sign. Since the text itself was familiar, it was relatively easy for the students to isolate these new punctuation marks and let them help with meaning and emotional tone without confusing them with braille letters or contractions.

The teacher can help the students to use quotation marks as context clues by pointing out that after a closing quote or in a broken quotation they can expect "said," "answered," "asked," "exclaimed," "demanded," or something of that nature. They should look for one that fits the sense and tone of the quotation.

Careful selection of titles

I want to stress the need for careful selection of the children's books to be used. Only one out of every 25 to 30 at which I looked was suitable. Most are too juvenile to interest adult readers. I think Robert McCloskey's *Make Way for Ducklings* fits this category, although it was an award-winning book and is delightful for children. Books based on fantasy, or with a foreign setting, usually have too many unusual words. Only a few books present the happy combination of simplicity with a certain sophistication in the revelation of human nature that makes them fun for adult readers while maintaining an easy vocabulary.

Press-Printed Books

☐ *Phase IV: First Press-Printed Books.* As our children became old enough to sustain interest through longer books, they loved the Laura Ingalls Wilder series, *Little House in the Big Woods, Little House on the Prairie, On the Banks of Plum Creek,* etc., and my husband and I enjoyed reading them aloud. We have moved to one of these, available from the regional library for the blind, as the first long, press-printed book for the group. I don't think it matters greatly which one is used; we are working in the one for which our library happened to have several copies on the shelves. My students are enjoying it. Another type of story might suit another group better. Some of the high-interest, low-vocabulary books written for slow junior and senior high school readers might be considered. The American Printing House for the Blind is printing more and more of these.

I am still reading new material aloud while my students follow, before they read it themselves, except that one young woman who had had some individual lessons with me before joining the group, and is faster than anyone else, often takes the lead now, to make it more challenging for her. When the other students are having their turns to read, I continue to allow only brief examination of the word they stop to figure out. I would rather tell it to them and have them move on than let them develop the habit of examining individual dots at length.

Silent Reading

☐ *Phase V: Silent Reading for Comprehension.* Because of time limitations, either for the teacher with a heavy load of individual clients or classes, or for the beginning braille readers themselves, regular instruction often ends as soon as the student is able to figure out most words. This is unfortunate, because it leaves him unassisted at a point where reading is still too laborious to be enjoyable. Continued guidance and supervised practice can help him develop the ease and speed necessary to make braille a practical and pleasurable reading medium. Phase V describes this continued teaching effort, which I will use as my students move on. The ideas represent my usual methods of teaching reading, with extensions formulated as a result of exposure to the methods of several specialists in rapid reading.

Minimizing subvocalization

In teaching braille reading, perhaps even more than with print reading, the tendency I have observed is to rely for an extended time on oral reading as the only acceptable response. Yet as long as we keep students reading aloud, we are encouraging the development of subvocalization, one of the primary deterrents to rapid reading. It is true that the "average" braille reader never develops speed beyond the rate of normal speech, but there have always been some individuals who did, and recent studies in rapid reading have indicated that many more could. When attempting to increase reading speeds, students usually find that the first major task is to break the habit of subvocalizing. It seems obvious that teachers of beginning reading ought to try to avoid or minimize the development of this habit.

Meaningful material

One way to do that is to move as early in the learning process as possible to silent reading, with emphasis on comprehension rather than on the mere word recognition which is about all that oral reading checks. Students may become fairly adept at identifying words without developing good comprehension of sentence or paragraph meaning. On the other hand, they may catch the essential import of a passage even if they miss some words. This is another reason for objecting to the stilted, isolated sentences found in the early lessons of the adult primers currently available. Word calling is all they require of the student. If more meaningful materials are provided from the beginning, identification becomes secondary to understanding, which should be the primary goal of reading.

Comprehension

Comprehension of passages read silently for meaning rather than for word recognition may be evaluated in several informal ways during reading practice sessions. Older children and adults can often themselves evaluate what they retain after quickly reading a paragraph or two by answering silently such basic questions as: "Who was involved?" "Where were they?" "What happened to them?" "How did they feel about it?" They can learn to reread rapidly to fill in details they realize they have missed.

Verbal Paraphrasing

☐ One nationally-known rapid reading specialist has students talk aloud as they read, paraphrasing as they go. At first the talking is minimal, giving the barest story line, so that it does not distract from the reading: "There's a little boy. . . . He's unhappy. . . . He's running away. . . . " The students are not telling the story to the teacher, but for their own benefit, to confirm to themselves that they are getting the content of the story. If several students are working together, they simply ignore each other as they talk aloud, so that there may be quite a buzz of quiet speech in the room. Gradually they increase the amount that they say aloud, but always paraphrasing and moving along in the reading.

Practice in recall

Another effective technique is to have one student tell another the main points of what he has read. His partner may then question him about details, the questioning itself serving as a stimulus to recall, and suggesting what to look for in a second reading. The two may then exchange roles, the first becoming the listener and questioner. This kind of practice helps each become more attentive as he reads, and is fun, besides. Similar reporting to the teacher, followed by questioning, puts the experience on a more formal level.

Key-word approach

In a more advanced form of the talking aloud technique, the student writes down key words after rapidly reading an assigned amount, answering such questions as: "Who or what?" "Where?" "When?" "Why?" "How?" He may then reread, focusing on details, and fill in his outline, so that the key response, "Minnesota," becomes "a wooded area in northern Minnesota." The total view must remain the prime concern, however, even at this point. The blind student could record responses on tape if he cannot type.

Read and reread for speed

Each rapid reading specialist with whom I have had contact requires, in the early practice sessions, quick reading for general content followed by one or more rereadings to fill in details, rather than a careful single reading. There is some controversy among language specialists about whether this is always the best sequence, but it is something which teachers of braille reading might try as a variation from the more usual procedures. There does seem to be some logic in using this method if good movement, speed, and emphasis on ideas rather than words are the goals of instruction.

Drill

☐ Consideration needs to be given to the place of drill in teaching braille reading. Freda Henderson and Richard Umsted have demonstrated in research studies that drill on individual contractions can be effective in increasing speed for pupils who are already reading braille. But what of its value for beginning readers? It is my feeling that drill has a contribution to make, that it can help consolidate the learning of configurations that have been encountered but not completely mastered through the informal reading. Within words and sentences, the perception of an individual letter or sign changes, however, depending on the other letters, signs, or punctuation marks in contact with it. Drill of single configurations therefore seems much less helpful to me than practice with groups or patterns. Words that begin with the same phonic blends can be drilled: *pr, pl, str, dr, tr,* etc.; words with common endings: *ing, ed, ous, ious, ary, fully,* etc.; basic verbs that change as the tense changes: *drop, dropped, dropping;* and the teacher should be watchful for any configuration combinations that seem always to be difficult for the students to identify, and compose drills to give extra practice on those. Even better than isolated word drill is studying the words in phrases or short sentences, so that the fingers encounter them in true reading motion.

Word lists

Recently, I have been looking ahead daily in the book we are reading, and composing drills on the words that will be encountered in the next class period that are likely to cause difficulty. Some of the students like to go over the drill before reading the new pages; others think they learn just as easily simply meeting the words in context. Undoubtedly there are individual differences in students' response to drill, and it would be best if the teacher could discover and respect these differences. One way that this might be done would be to prepare taped presentations to accompany drill sheets so that the student who benefits from this type of work could do it out of class, and those who do not respond to it would not have to sit through it. Research study on the usefulness of a variety of possible types of drill needs to be done.

Physical Arrangements

☐ During the early stages of instruction, when the students are reading from single loose sheets, it is essential that something be provided to keep the sheets from slipping around on the table. Otherwise, both hands will not be free to move across the braille lines. A thin sheet of plastic foam such as hobby shops sell, placed under the braille sheet, takes care of this problem.

Table height

Another physical factor to consider is table height. The standard table or desk is not necessarily the best height for all readers. We have found that a lower table—one just high enough for the student's knees to fit under—allows a more relaxed position of the arms and hands. At this lower level there is no tendency to rest the forearms on the paper or book, a habit which slows movement, and yet the position is not tiring.

Some students in the rapid reading workshops conducted at Brigham Young University found it comfortable to read with the braille books on their laps. A plastic foam pad kept the books from sliding off. As in reading at the low tables, the lap positioning places the arms, wrists, and hands in very relaxed, free-moving alignment.

Writing Braille

☐ I realize that for many older adult students of braille, the need to be able to write down telephone numbers and addresses and other brief notes may be a strong motivator in beginning to study braille, with limited interest present in reading braille books. The method of teaching reading which I have described may not be appropriate for such individuals. Emphasis for them may need to be on writing. For those students with a real need or desire to learn to read independently again, however, I think my method offers the hope of really learning to read with enjoyment, not just to spell out words. It can lead very naturally into trying the techniques of rapid reading used first in workshops at Brigham Young University and later at other schools under the direction of Dr. Vearl G. McBride, and by Dr. Florence Schale of Northwestern University in studies done under the sponsorship of the Task Force for Independent Living of the American Foundation for the Blind. For students with such goals, I recommend that the teaching of braille writing be delayed until some degree of success in reading has been achieved.

The time to introduce writing

The reason for delaying is that writing puts emphasis on concern for dot structure of configurations, and I want to avoid this in the early lessons, until good movement has been established. Writing may be introduced, however, as soon as the student has learned to recognize a good number of words and individual configurations, and the basic marks of punctuation, even before he starts on his first actual book. He should use a braillewriter, and may write short sentences related to his reading, or the words of a song he likes, or something else that he can then read with the usual emphasis on movement. This kind of introduction to writing often improves his recognition of braille characters in the reading lessons and serves to reinforce his reading skills. Reading and writing then advance together. Rules for use of contractions should be given as the need arises in connection with both writing and reading.

Projected Future Efforts

☐ I believe it would be possible to plan a series of lessons using taped instructions and taped slow readings of new materials for situations in which the teacher and student could not meet together often. I worked just briefly last winter with one young man who was reading, but very slowly, and when he could no longer meet with me I recommended that he get both a braille and talking book edition of one of the Laura Ingalls Wilder books, set the talking book machine on slow speed, and follow in the braille copy for a page. Then he was to turn off the machine and reread the braille. After reading several pages in this way, he was to read all of them again, with the talking book at a faster speed. Working in this way, he more than doubled his reading speed in a few weeks, without the benefit of a teacher. I think students could work alone even from the beginning, between infrequent sessions with the teacher, if taped instructions were prepared to accompany the beginning braille materials.

Special materials

Materials for Phase I, as described here, that would be useful for most students in most situations need to be developed. Most of mine have been geared to the particular students I have worked with, or specifically oriented to student life at the university where I teach. They would need a great deal of modification before being ready for general use, and I suspect that an enterprising graduate student somewhere might easily begin and complete a new set before I will produce one.

Conclusion

☐ There have been no research studies to test the value of the method of teaching braille reading which I have described here. I have used it because it seems to me the logical approach if one has the ultimate goal of developing interested readers who achieve good speed. I have used it successfully myself with adults of a wide range of intelligence and educational background, but I have collected no research data. I feel sure that other teachers have developed similar techniques, and I would welcome the opportunity to exchange ideas with them. I would be very glad if someone were able to try this method under controlled research conditions, and offer an impartial evaluation of it. Research in the actual methods of teaching braille reading has been almost completely neglected. I would like to see that situation changed.

The Role of the Low Vision Assistant in the Care of Visually Impaired Persons

ABSTRACT: Low vision assistants are critically needed to fill the manpower shortage in low vision care if complete services are to be available to all visually impaired persons. It is important that formal training programs provide these paraprofessionals with the knowledge basic to low vision care. Assistants must be qualified to perform at least half of the necessary diagnostic procedures, take case histories, train the patient to use the low vision aid and provide follow-up care, write reports, and make referrals to other agencies when needed. Professionals and paraprofessionals work as a team toward improved low vision care.

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Low vision clinics were introduced in the early 1950's by progressive agencies in several major cities of the United States. Within recent years analyses of many of these low vision programs have appeared in the optometric and ophthalmological literature (Rosenbloom, 1966), providing ample evidence that low vision aids are enabling a substantial number of persons to be rehabilitated. The clinics have given us excellent models to follow. They have traditionally utilized a multidisciplinary, team approach to provide comprehensive low vision care.

Comprehensive care

Because the effective service program must concentrate on the person as a whole and not just upon the visual impairment, providing the full gamut of professional care requires comprehensive programs of evaluation and training as well as a great expenditure of time. With an increasing number of visually impaired persons being identified, there exists the serious dilemma of how to provide services for more people while not lowering the standards of existing programs and at the same time expanding the programs that do not now offer complete services. In fact very few of the persons currently receiving services are involved in comprehensive care programs. Not only is it impossible to create new programs with the present number of professionals in the field, but it is unfeasible to serve properly the entire visually impaired population. Thus it is easy to understand the concern over manpower needs. It is necessary to examine the possibilities for developing training programs for low vision clinic assistants as a means of increasing the personnel and therefore the potentials of the low vision service. The purpose of this paper is 1) to present a rationale for the use of low vision assistants, 2) to identify the qualifications those assistants should possess, and 3) to describe those aspects of the low vision service that can be carried out by the trained low vision assistant.

Manpower needs

Purpose

Need of training

Many low vision assistants have had no opportunity for formal training and have learned their duties "on the job." Under such circumstances, much of their knowledge of terminology and method has been learned by rote. Experience alone may perpetuate mistakes and misconceptions. Yet this has been the traditional approach. Since the inception of the Chicago Lighthouse Low Vision program in 1954, one of the authors has supervised the work of three low vision assistants. All were users of low vision aids themselves. They were highly competent, devoted, and enthusiastic about their roles in low vision care, but all of them wanted and would have benefited from a formal training program. (To paraphrase Sir William Osler, the great medical teacher-practitioner, experience without knowledge is to sail an uncharted course, while knowledge without experience is never to go to sea at all.) There is a great need for formal training programs and acceptance of and opportunities for trained assistants in low vision clinics.

Qualifications

□ The low vision assistant should be required to have at least two years of college including courses in psychology, sociology, English (with emphasis on writing and communication skills), biological sciences (including an introduction to human anatomy and physiology), special education, physics of light, human development, and an introduction to social service administration. Completion of a two-year training program as an optometric technician or ophthalmic assistant with the Associate of Arts degree is highly desirable: such a program provides not only training in basic liberal studies, including secretarial skills, but also an introduction to biological, physical, and visual sciences as well as to those clinical skills and knowledge basic to comprehensive vision care.

Required knowledge

Whatever program he chooses, the assistant must have an understanding of the human visual system; knowledge of optometric and medical terminology; some understanding of ocular disease processes such as diagnosis, symptomatology, and prognosis; knowledge of treatment modalities; and of low vision prescription types—their design, utility, and limitations and adaptive training techniques. He must also be able to perform assigned administrative and technical duties accurately in the practitioner's absence.

Experience in the field

Ideally, the assistant should already be involved in the field, *e.g.* some of our highly regarded clinics are administered by partially seeing individuals who themselves have benefited by the prescription of a low vision aid. Direct experience with the low vision service, including the use of a low vision aid, increases an individual's understanding of the total service and makes his role a more effective one. For the assistant with normal visual function, previous experience in the field of special education in general and with visually handicapped persons in particular is highly desirable. He should be able to communicate properly with persons who have a severe visual impairment, and especially with the elderly since it is the older person who most often suffers from visual loss. The assistant should show a willingness as well as a capability of exercising patience, understanding, and compassion.

Alleviation of manpower shortage

The use of a properly trained assistant will decrease the manpower shortage in two important ways. First, many practitioners trained to work with the partially sighted are not willing or able to make the time committment that up until now has been required for this type of service. If these professionals see the possibility of designating time-consuming general office responsibilities to trained assistants, they may be encouraged to participate in low vision care. Second, for those already in the field, having an assistant offers the practitioner the opportunity to improve his present program of services. This is particularly significant because it allows the addition of adaptive training and follow-up visits—services almost universally neglected in private practice and even in most clinics.

Model Program

☐ Since the low vision service is defined in so many different ways by various practitioners and institutions, the authors have based their recommendations for an optometric assistant training and service program on an assumed "model." This program will illustrate the concept of total care and may be used as a guideline in the evaluation of present services and the setting up of future programs. However it must be remembered that all clinics or practitioners may not be able to provide such a comprehensive program and that not all patients are in need of this broad spectrum of care.

Locating the patient

The first and most important step in any program is to get the patient into the office for care. Too many visually impaired people are virtually shut-ins, and it may be up to the low vision personnel to try to locate them. It may be necessary to become involved in local groups working with the elderly, or it may be as simple as making a few phone calls. Through such interaction more people will be made aware of the service *and seek care.* In addition the routine case history administered to sighted patients by the technician includes questions regarding the visual health of immediate family members. The technician should use this information to inform the patient of the availability of services for his relative and the advantages of using optical aids or other devices for the improvement of visual function.

Case history

The case history is one of the most important parts of the low vision examination. This is where the patient's ability to function visually, his objectives and motivations in life, his ability to cope with new experiences, and a general knowledge of the person is obtained. Such an interview usually requires 30 to 45 minutes. It enables the doctor to evaluate the patient's self-image, a factor which will be vitally important to the services that follow.

Diagnosis

A basic diagnostic battery of tests is then performed to evaluate the patient's visual system. These include accurate measurements of the visual acuity, determination of the presence of any uncorrected refractive errors, color perception, evaluation of binocularity, and a variety of ocular health tests. The assistant should be trained to perform a minimum of 50 percent of these diagnostic procedures. This added manpower obviously provides more time for each patient and allows more diagnostic data to be collected. Most importantly, the assistant obtains information from the patient regarding his needs and how these needs may relate to the final prescription. It is important that the doctor and assistant work as a team so that all information collected by the assistant is understood in full by the doctor, who must base his diagnostic and treatment plans upon this input. Not only must the two work well together but they must be seeking the same goals and objectives for the patient.

Prescriptions

The low vision aid prescription requires a little more sophistication in the designing of the system than a conventional lens. This includes the relatively simple task of frame selection. The assistant's background and training allow him to assist in the design of new systems and the verification of complicated systems received from the laboratories. The proper dispensing and adjustment of a microscopic or telescopic correction can make a significant difference as to whether or not the patient will adapt successfully to the aid.

Using the aid

Once the aid has been dispensed, the patient must be trained in its use. Unlike conventional lenses, the patient does not use the low vision aid in a comfortable manner immediately. For example, with a reading aid the assistant must work with the patient in maintaining the close working distance (as little as one inch), adapting to the small field (often only one word is seen at a time), staying on the line and not losing the place, using the proper amount of light, minimizing fatigue, and coping with the frustration of learning to read all over again in a unique visual environment of magnification. These training programs should continue until the patient demonstrates proficiency with the aid in the clinic and, more importantly, outside the clinic. (For an objective view, it may be a good idea to ask a friend or family member to evaluate the patient's success with the aid at home.)

Follow-up

After the patient has received and learned to use the aid, the doctor-technician team's responsibility to the patient still exists. Follow-up visits must be scheduled. The patient may have suffered further visual deterioration or a change in life style, such as a new job, may make further demands upon his vision. The aid may need adjustment, and/or the patient may be successfully using his present aid and could be helped to perform other visually-oriented tasks with an additional optical system. Quite often the patient will not bring this information to the examiner so an effort must be made to maintain contact with him, preferably through the technician. Follow-up care at regular intervals by letter questionnaire or telephone to determine patient's progress and success with the low vision aid is essential.

Role relationships

As the authors have shown in introducing this new concept of low vision care as an interdisciplinary approach, the technician must develop a role relationship with the "team." And since the low vision assistant represents a comparatively new concept in professional services, role relationships with other professionals and paraprofessionals must be established. The assistant must learn to interact with a new and different set of disciplines in each new professional setting. Care must be taken to ensure that the assistant will be accepted as complementary to the present service program and not in competition with it. The activities of the low vision assistant will in some settings overlap with those of social service workers, counselors, case workers, nurses, administrators, and at times even the professional examiner.

Referrals and reports

If the interaction of these professionals is understood, the curriculum and training of the assistant can reflect the needs and the sensitivities of these groups. The assistant should have an opportunity to observe a variety of settings in which optometry and ophthalmology function, including private practice, clinics, agencies for the blind, Veterans Administration, and vocational rehabilitation programs. By so doing, he will be able to make referrals to agency professional staff or to other agencies for such services as social work counseling, family counseling, communication with educators, and referral for community services involving financial assistance and vocational evaluation and/or training. Reports to the patient's ophthalmologist and other professionals as well as referring agencies are also the responsibility of the low vision assistant.

Training Curriculum

□ The aforementioned skills that a technician should possess are based on a comprehensive examination model. Even though this model obviously is not appropriate for all types of low vision care, the technicians's training program which utilizes this model will produce a paraprofessional who can be incorporated easily into almost any professional environment.

Having attained the necessary skills in diagnostic test procedures, the technician should be given a substantial background in—and a real understanding of—the causes of visual impairment; reactions to blindness and visual loss by patients, practitioners, and the public; basic design of low vision aids; and an introduction to the principles of magnification utilized in low vision. Must important is a thorough familiarity with a broad spectrum of optical and non-optical aids and a knowledge of their potential as well as limitations.

Conclusion

□ With this background and with sufficient exposure to patients, the trained paraprofessional will prove to be an asset to any practice or program of low vision care. If utilized properly, the technician can improve markedly the vision care programs available to partially sighted persons in offices and clinics today. The vision care practitioner often has neither the time, the training, nor the temperament to provide all the services these special patients require. Assistants are critically essential and needed as quickly as they can be properly trained. Through this new manpower resources many more of our society's visually impaired persons can be rehabilitated to more productive and self-satisfying lives.

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Index for Volume 68 of the New Outlook (1974) Is Included With This Issue

What Is Effective Programming for Deaf-Blind Children?

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ABSTRACT: Effective programming, operationally defined, leads to positive results. In education this means that the teacher must be aware of the concept of the program as it relates to the role of the teacher, the construct of the program and how it affects activities, and the content of the program as based upon the needs of the child and in terms of the concept and construct. It is of utmost importance to document activities so that the program can be evaluated to determine whether it is meeting its goals and objectives.

What is effective programming for deaf-blind children? There are several reasons for asking this question:

Need for Effective Programming

☐ First of all, there has been an increase in the number of programs available for deaf-blind children in the past five years. As late as 1970, there were fewer than a dozen programs in this country recognized as being specifically for deaf-blind children. Today, there are nearly 100 programs specifically for the child with impairments in both hearing and vision. Those who fund these new programs have every reason to ask if they are effective. Those who receive services, parents and children, should be asking if programs are effective, appropriate, and/or if they are an asset. Those of us who work in these programs must ask this question, not to justify our reason for being, not to prepare ourselves for eventual outside evaluation, but to maintain our own self-congruence that we are doing what needs to be done.

Standards

There is a second reason for asking if programs are effective. There is a national organization which is beginning to request standards for programs for deaf-blind children. This organization will surely gain support for its request. However, in my opinion, the pursuit of standards may go in either of two directions: standards could become ritualistic, institutionalized "walls," precluding services to many deaf-blind children in the long run. This route could build a barrier of staff certification requirements, union recognition, qualification standards for enrollment, and elaborate (and irrelevant) evaluation procedures that would make the education of deaf-blind children lose its momentum and its effectiveness.

On the other hand, the setting of standards could go in the other direction and, hopefully, illustrate that the needs of deaf-blind children and their families are those that are common to all children and families. Standards, in this aspect, could serve as model programs, as exemplary and novel approaches to educational services for many children who are not currently receiving appropriate programming.

This article is based on a paper presented at the Fall Workshop for Teachers of Deaf-Blind Children, Chicago, Illinois, September 28, 1973; sponsored by the Midwest Regional Center for Deaf-Blind Children, Lansing, Michigan.

Effectiveness

In either instance, before these standards can be agreed upon, the primary issue is effectiveness of programs. In this instance, effectiveness is operationally defined as "being able to bring about positive results." Once effectiveness can be demonstrated, then it may be possible to define standards for programs. For those of us working with deaf-blind children, standards should be welcomed if they ensure that all deaf-blind children receive the maximum opportunities to develop their potential abilities in programs designed to meet each child's educational needs.

Self-congruence

A third reason for asking what effectiveness is, was alluded to in a previous statement regarding self-congruence. If those of us working with deaf-blind children are sure of ourselves and what we do, the probability of helping the child seems to increase. Knowing what to do now and what to do next leads to a sense of security and purposeful teaching that is otherwise left to chance or depends upon personality factors rather than training experiences. The effective teacher bases instruction upon the child's needs as indicated by information collected about the child in various ways rather than starting each child at a certain level regardless of where he may be in his learning process.

Scheduled activity

I have many opportunities in my work to visit programs for deaf-blind children. I am not there to judge, necessarily, but to observe and try to help. On one occasion I happened to walk into a classroom full of activity—teachers and children on the floor in a circle, aides sitting with children who could not manage to sit or stand alone, clapping and singing a song to teach what I presumed was group interaction and self-identity. The song went something like, "Who has a friend? Mary has a friend; Mary stand up; Show us your friend . . . etc., etc." While this was going on, for a very brief moment I had eye contact with the teacher (looking at me looking at her) and in the next second I caught the roving eye of a little girl, bent over from having such difficulty keeping her sitting balance. Both of these moments hit me as having the same message from teacher and student, "What in the hell is going on?" I really wondered to myself who had a friend. Was the teacher a friend to herself? Did the child have a friend? Was the program a friend to either?

Later in the day, I had a chance to talk with the teacher and asked her about the activity in hopes of finding out why I had received that message. The teacher's casual response was that each morning the class was expected to have a group activity. The word "expected" was the clue. Who expected it? Why was it expected? What was the expected outcome? It turned out that the decision had been made by someone outside the classroom. The class schedule read: "8:00 a.m. to 8:15 a.m.—Group Activities." Someone had stated—and it may well have been me—that the child should start the day developing a rapport with himself and a rapport with others. What no one had asked was, "Are activities such as this effective?" I do not think that I got the message from the child or teacher that the activity was effective.

Expectations

However, the illustration serves to point out that there are basic ground rules under which each of us operates. The teacher had been expected to do certain things. The child was expected to do certain things. A role had been defined: for the child, for the teacher, and for the program.

Principles of Effective Teaching

☐ From this, three principles may be stated. The first is that, for the teacher to be effective, the role which teaching personnel are expected to perform must be clearly defined. The teacher must know what is expected by way of performance. This principle allows the teacher to know how teacher effectiveness may be measured.

A second principle is this: the teacher must know what objectives the program is to attain and what strategies or approaches are available to attain these objectives. In this manner, the teacher can measure program effectiveness.

The third principle is that the teacher and all staff concerned with the education of the children must have the courage to examine the program to see whether strategies meet objectives and the role of the teacher has been fully met. In this manner, the staff can determine what activities, strategies, and objectives are effective and how to correct ineffective effort. If these principles can be met, effectiveness becomes less of a chance occurrence and the probability of being effective increases.

Custodial care

If the teacher is expected to be a baby-sitter, know it and act accordingly. James Hymes (1968) described this concept of custodial care as being similar to a parking lot: "Presumably you get your child back in the same condition in which you left him: no dented fenders, no scraped paint, no changes for the worse, and none for the better, either."

I hope that none of you are in such a program; however, if you are, your strategy would be to see that the child did not do anything, was not wet, not uncomfortable, and was, literally, taken care of. Your evaluation would be that the child left the classroom each day without experiencing discomfort, bashed fenders, or scraped paint. Under such a construct, your program would be effective, even though you as a teacher might experience frustration when you tried activities which led to different goals.

Teacher's Roles

☐ What are some of the teacher's roles in various program concepts? Hewett (1968) and others (Bateman, 1967; Hammer, 1971) have attempted to define these roles through educational strategies and approaches used to provide services to handicapped children. Hewett lists three concepts in teaching children: the psychodynamic-interpersonal strategy, the sensory-neurological strategy, and the behavior modification strategy.

Educational therapist

In the psychodynamic-interpersonal strategy, the teacher assumes the role of the "educational therapist." "In this role, artistry and intuition may be of greater importance than teaching competency." (Hewett, 1968, p. 18) This strategy focuses on the meaning and origin of the child's behavior and attempts to direct this behavior toward constructive goals. This is done through development of insight into the child as related to cultural expectancies of behavior. The educational therapist is concerned with educational, psychological, and at times, psychiatric information in planning programs for the child.

Educational diagnostician

A secondary strategy role listed by Hewett (1968, p. 24) is that of "educational diagnostician," who uses the sensory-neurological basis in providing educational programs for handicapped children. The sensory-neurological strategy relates to medicine, especially neurology, and " . . . in general, there is little concern with inferred psychological meaning of the child behavior" although, in Hewett's view, those who utilize the approach vary on this point. This strategy is concerned with the underlying causes related to behavior.

Learning specialist

A third strategy is behavior modification; the teacher becomes a "learning specialist." In this strategy the child's behavior is viewed in terms of its adaptive function. Causal factors or the origin of behaviors are not considered.

> [Although] it is not, as some may assume from the emphasis on structure and routine, mere emulation of a teaching machine. Selection of the appropriate "something" to assign the child as a beginning task, the elaboration of this task until the child reaches the desired standard of functioning in the classroom, and the selection of the type of meaningful positive consequences for appropriate behavior and the type of negative consequences for inappropriate behavior in order to insure learning, requires a considerable knowledge of child development processes, a degree of clinical judgment, and familiarity with sound educational practices (Hewitt, p. 46).

Hewett was, of course, writing about the education of children who were emotionally disturbed; but his categories seem applicable to any handicapped child.

Clinical Approaches

☐ Bateman (1967) was discussing children with learning problems when she listed three clinical approaches to teaching children: the etiological approach, the diagnostic-remedial approach, and the task analysis approach. These too seem to be applicable to different types of children with handicapping conditions. The etiological approach centers on causative factors of delayed development, while the diagnostic-remedial approach focuses on the delineation of specific sensory and perceptual deficits. The task analysis approach attempts to define educational tasks which the child needs to achieve particular objectives in the classroom. Bateman does not contend that these approaches are independent but rather that they are educational tools to aid in the clinical application of education to the needs of the child.

Developmental interventionist

There are two other roles which the teacher may assume in working with handicapped children. The first of these may be classified as the "developmental-interventionist" approach, in line with Hewett's categorization. In this role the teacher serves as an "educational clinician" who observes systems of development in the child and provides specific intervention to encourage positive traits which are emerging. The teacher concentrates on behaviors which the child is expected to present. As the child indicates the performance of these behaviors, the teacher provides specific procedures to encourage further use of these traits. The educational clinician is concerned with child development, child psychology, and early childhood education as well as special education procedures in providing appropriate services for handicapped children.

Helping professional

There is another role which seems to be emerging. This role is based upon psychotherapy and has been defined through the work of Rogers and more specifically Truax (1967). Here the teacher assumes the function of a "helping professional." This role is concerned not so much with the past training and educational accomplishments of the teacher as it is with the personality traits which will provide an accepting environment for the child to develop and interrelate with others. The "helping professional" has been successfully incorporated into vocational rehabilitation and into mental health clinics and deserves more thorough study in classroom settings. In this function, the teacher relies upon three basic characteristics to aid the child: empathy, warmth, and genuineness. These traits have been researched and are defined as follows:

> *Accurate empathy* involves more than just the ability of the therapist to sense the client or patient's "private world" as if it were his own. It also involves more than just his ability to know what the patient means. Accurate empathy involves both the therapist's *sensitivity to current feelings* and his *verbal facility to communicate this understanding* in a language attuned to the client's current feelings (Truax, 1967, p. 46).

Empathy

Empathy indicates that the teacher is attuned to the needs of the handicapped child and has developed observational techniques to read the child's behavior. In the classroom, empathy includes awareness of the limits of the formal educational program and the wider application of educational services to the child outside the classroom. The teacher may realize that it is more important at a certain point to provide direct program services to the mother than to the child. Accurate empathy requires the teacher to become a listener and a thinker; the empathetic teacher picks up clues from the posture of the child, verbal expressions, or other indications of inner thought.

> *Non-possessive warmth,* or unconditional positive regard, ranges from a high level where the therapist warmly accepts the patient's experience as part of that person, without imposing conditions; to a low level where the therapist evaluates a patient or his feelings, expresses dislike or disapproval, or expresses warmth in a selective and evaluative way (Truax, 1967, p. 58).

Non-possessive warmth

The teacher of the deaf-blind child should rely on non-possessive warmth to relate to the total picture of the child's development. He can place demands upon the child in an atmosphere which is conducive to behavioral changes without placing undue emphasis upon achievement. This is the relation between teacher and child which is often observed in successful teaching situations but is not usually defined. It is an atmosphere. It is an attitude. Warmth serves, theoretically, as a precondition for sensing those inner experiences and feelings which the child cannot readily communicate. It involves a willingness to share equally good experiences and bad experiences.

Genuineness

Genuineness has been described as the most difficult trait to develop. Truax (1967, pp. 68-69) defined this characteristic as:

> . . . a high level of self-congruence where the therapist is freely and deeply himself. A high level of self-congruence does not mean that the therapist must overtly express his feelings but only that he does not deny them. Thus, the therapist may be actively reflecting, interpreting, analyzing, or in other ways functioning as a therapist; but this functioning must be self-congruent, so that he is being himself in the moment rather than presenting a professional facade. Thus the therapist's response must be sincere rather than phony; it must express his real feelings or being rather than defensiveness.

For the teacher, genuineness is simply being himself; it is relating to the child or parent in a real aspect of himself, not with a response growing out of defensiveness or a merely " 'professional' response that has been learned and repeated . . . " (Truax). Genuineness in the teacher could mean the realization that perhaps someone else would be more effective with a certain child or that no one really knows what to do for a child in a particular setting. Genuineness is admitting, "I don't know" to a parent or learning how to work with the child from observing the parent.

Once the role of the teacher has been defined (or mutually agreed upon), the teacher can at least know what is expected. The concept of the program has been defined in terms of teacher function.

Program Construct

☐ The next step in effective programming is, then, the construction of the program. If the teacher is expected to teach, for example, motor development or activities of daily living and the concept of teaching is for the teacher to use the setting in which the child lives, the teacher should be able to define this construct. If activities of daily living are to be taught in a day school, the teacher may want to spend more time with the mother than with the child in the beginning of the program so that carryover of school activities are possible in the home. If activities of daily living are to be taught in a residential school, the teacher may want to work with houseparents and/or children in the dormitory. Teaching in a medically oriented program is different from teaching in a strict behavior modification program. The teacher needs to be able to recognize this construct and prepare activities appropriate to the setting as well as to the expectancies of function.

Program Content

☐ Thus, content is based upon the needs of the child in terms of the concept of the program and in terms of the construct of the program. In an operant conditioning program, a schedule that reads: "8:00 a.m. to 8:15 a.m.—Group Activities" would reinforce the child's efforts to interact with another person, and the child would eventually move nearer to the goal of interacting with others in groups. The same result might be achieved in a developmentally based program where the child is provided with an environment rich in interesting and stimulating materials and people. The child, upon coming into the classroom at 8:00 a.m. and beginning to play, would naturally be moving toward the desired outcome of group activities. Both of these examples illustrate effective program content. The key seems to be that the teacher knows what to do, when and how to do it. The program's content depends upon the concept of the teacher's role, the construct under which this is to take place, and the content selected in order to move toward the selected goals.

Evaluation

Documentation

☐ There is one further step: it is so vital to know how effective a program has been that it is imperative that the teacher document what has taken place. I cannot emphasize enough how strongly I advocate documentation. There are two aspects to documentation: formative and summative. Formative documentation consists of the day-by-day, minute-by-minute correcting devices which tell the teacher if each activity fits into the total sequence of strategy and objectives. Formative documentation is deciding to use this toy or material rather than another toy or material in a certain activity. If documentation has been kept on activities, formative evaluation can correct procedures to keep them goal orientated. Summative documentation is the accumulation of information which aids in the long-range evaluation of activities and effectiveness. Thus, the original baseline data on levels of behavior, daily documentation to correct errors in procedure, and end-of-the-year or semester evaluation should be compared to the program goals and objectives. This allows teachers and other staff members to measure effectiveness. It also allows decision makers, outside the classroom, to make their decisions based upon data rather than extraneous information.

Methods

I do not care whether documentation is conducted through charting rates, developmental scales, periodic staffings, or anecdotal records. I feel that the method of documentation should be that which best fits data and information to formative and summative evaluations. That is what effective programming is all about: Decisions are based upon knowing what to do, how to do, and when to do, and all of this must be demonstrated in some systematic manner.

Summary

☐ Therefore, an effective program is one in which a child changes toward some positive behavior as a result of the teacher knowing the concept of the program and how it relates to teaching, the construct of the program and how to prepare activities to make the most use of available resources, and how to measure these activities in some systematic manner so that outcome may be reviewed and presented to others. The only way effectiveness may be obtained is through an understanding of the underlying structure of expectancies, the approaches and strategies available to meet these expectancies, and the evaluation of effort to measure whether the objectives of the program have been met.

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Apartment Living for Rehabilitation Clients During Training

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ABSTRACT: Housing for the rehabilitation clients of the Cleveland Society for the Blind is provided in an adjacent apartment building. The trainees are expected to apply the skills they learn at the agency to the problems of daily life encountered in maintaining their own apartment, interacting with sighted neighbors, and functioning in a typical neighborhood and community. A resident counselor is present to provide guidance and aid when necessary.

Most rehabilitation centers serving blind and visually handicapped persons provide in-house or dormitory living for their trainees. In some instances, residential structures adjacent to the center are acquired and placed under the supervision of houseparents. While these arrangements tend to provide close supervision, a protective environment, and some opportunity for personal freedom, do they really enable the trainee to practice the skills and activities of daily living that he is learning?

Different approaches tried

Since the opening of the Cleveland Society for the Blind's Rehabilitation Center in 1957, we have been experimenting with a variety of residential concepts for clients who need housing while receiving services. We advertised for board and room for students and used the Y's, motels, rooming houses, and rented apartments. Each arrangement, however, seemed inadequate or presented difficulties that frequently jeopardized the program.

About five years ago, we proposed a new living plan to the Society's Board of Trustees. This plan was not perfect in its design, but it did seem to offer the best opportunity for the trainees to apply those skills and techniques taught at the center during the day.

A New Approach

□ Originally the Society found a 227-unit hotel-apartment building operated for elderly persons by a religious group. Through the contacts of one of the board members, arrangements were made so that we were permitted to rent, as required, furnished apartments housing from two to four individuals. In addition to the basic furnishings, provided by the management of the building, the Society added cooking utensils, electric fry pans, coffee pots, minimal linens, dishes, and other equipment necessary for good housekeeping.

Orientation

The trainees living in these apartments were under the supervision of a resident counselor, who was a member of the center's staff. Transportation to and from the Sight Center was furnished until the trainees had received instruction in mobility and could safely travel on their own on public transportation. In the initial stages, the instructors in mobility and the activities of daily living oriented the trainees to the apartments and their cooking facilities, to the building itself, the laundry facilities within the building, and the general neighborhood and its groceries, drug stores, dry cleaners, restaurants, bars, banks, and other sources of goods and services.

A Second Setting

□ In August 1973, the Society acquired a 20-family apartment building adjacent to the Sight Center and converted six of the units for trainee housing; one additional unit was reserved for a resident counselor. The apartments are fully furnished and include a modern kitchen, dining room, living room, full bathroom, and two twin-sized bedrooms. Each can thus conveniently house from one to four persons.

Not a protected facility

The trainee apartments are scattered about the building so that the blind and visually handicapped residents find that they are not living in a protected dormitory facility or in a residence supervised by houseparents, but rather living independently in an apartment house surrounded by other tenants. If the individuals in a unit get "out of hand," the building management or the neighbors go directly to the occupants, as they would with any other tenants, and register their complaint—and complaints have been made.

Resident Counselor

☐ The resident counselor assists the trainees in shopping and is available from four in the afternoon until ten in the evening for conferences and to provide other needed assistance; he is aided by a corps of volunteers. He is also available to drive the trainees to and from whatever recreational activities they might plan for themselves. Periodically, and generally unannounced, he visits the apartments to inspect for cleanliness, proper food storage in and upkeep of the refrigerator, and compatibility of the occupants. The counselor is also on call until eight in the morning should any medical or other emergency arise. Also, it is understood that he will be available during the weekend should his services be required. He maintains an inventory of those supplies furnished by the Society. The present resident counselor is a student at Cleveland State University. For his services, he receives a completely furnished apartment and $120 per month toward living expenses.

Advantages

☐ After five years experience with this approach to furnishing residential facilities to the rehabilitation trainees of the Center, we have found the following advantages: 1) there is a transference of the techniques and skills taught at the Center to the real-life setting in the apartment building; 2) it emphasizes the need for independence and motivates each trainee to seek his maximum capacity; 3) it provides the trainees with the opportunity to live together in a freer community among themselves and, more importantly, among their sighted neighbors; 4) it has made the building management and the community more aware of blindness and its basic problems, while at the same time stressing the potential of each individual who can, with adequate training in basic skills, become an acceptable member of society; 5) it provides an opportunity for the staff of the Center to focus on the needs of the individual so that training in the activities of daily living are better related to the actual living arrangement of the student; 6) renting apartments as required, except for the one occupied by the counselor, has been less expensive to the agency than maintaining dormitory facilities, purchasing and maintaining a home with houseparents, or other arrangement; 7) the experiment has been sufficiently successful to cause the agency's Food Service Division to rent apartments in the Sight Center Residence, on the same basis, for students referred for training in food service management classes; and 8) it is believed that this arrangement can expedite the rehabilitation process and reduce the time involved in evaluation by about two weeks for the average student.

A Final Word

☐ This residential arrangement has not been without its problems. Personality conflicts, medical emergencies, over-enthusiastic parties, and personal difficulties have all been a part of the five-year history of the program. But living itself is coping with such problems. In our judgment, this experiment in living has proved itself invaluable as an *adjunct* to the services of the rehabilitation team and to the rehabilitation of the blind individual.

Congo Expedition Follows Stanley's Route; River Blindness To Be Studied

A New Attempt

One hundred years ago this past fall, Henry Morton Stanley's ill-fated attempt to explore the entire 2,718 turbulent miles of the Congo River began. The journey ended after 2,118 miles and 999 days. Of the 354 who set out on the expedition only 116, including Stanley, ended it; 238 died or disappeared. On October 9, 1974, another expedition set out, in specially built rubber boats, to try what Stanley failed to do and which up to now has never been done. This time, however, the expedition includes only 40 people, expects to take only four months, and the purpose is not exploration but scientific study, particularly the study of river blindness which the United Nations estimates has blinded some three million people who live in the sub-Sahara regions of Africa.

River blindness team

A team of 15 specialists in river blindness, led by Dr. Fred Rodger of the United Kingdom and including an entomologist, a sociologist, a nutritionist, an immunologist, and an ophthalmologist, are part of the 40 men and women, all scientists, taking part in the expedition. The river blindness team is setting up encampments in both savannah and rain forest areas of the river. They will examine the eyes of persons both infected with and free from river blindness, which is caused by a fly-borne parasite. As a result of the study, the team hopes to be able to recommend a drug or vaccine to replace DDT, which is devastating to the ecological balance of the area.

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Hindsight/M. Robert Barnett

Situation Wanted?

For the fourth time in my life I am looking for work. Now, I know that there are those who say they never have had to do so; and, I guess, when it comes right down to it, neither have I—in the sense of major life changes—such as when I became the executive director of the Foundation.

However, everything is relative, relatively speaking. There were times when the need for a job was quite a major consideration, and I now find that it may become so again. I have never been really unemployed; but, rather, under-employed. That is what I am now; and, as I said, for the fourth time.

I have to begin by telling you about job hunting when I was a sighted kid. This is not just an exercise in nostalgia and egoism. I hope to make a point by the time this magazine goes to press—which is just about now.

It was the Depression days. Jobs were strangely plentiful on the one hand and ludicrously bad paying on the other. At one time or another, from the ages of 13 to 15, I earned 14 cents an hour working after school and Saturdays in a printing plant; five dollars a week delivering groceries on a motorcycle; a dollar a day in a bakery (plus all the jelly rolls I could eat); plucking chickens and scaling fish in a poultry and fish market—for all the chickens and fish I could eat; loading watermelons on a Georgia farm for all I could eat and picking cotton—which I could not eat, but which gave me bed and board.

In these modern times, there is a lot of talk about something called "career education." None of the things I did in those early years struck me as a basis for a "career"—especially plucking chickens or loading watermelons. Further, I did not know that I was destined to become a blind person and so I set about, in some basic studies in junior and senior high school, for a promising—and profitable—career. I enrolled in a course in bookkeeping, another in commercial art, another in the Spanish language. I spent most of my time in classes practicing drawing. I particularly remember the drawings I made of a cute little teen-ager who sat across the aisle from me in geometry class.

Needless to say, none of these experiences stood me in good stead when I lost my sight at the age of sixteen. Not knowing what to do for a living—meaning how to have enough to eat—I went on welfare which, in that year, amounted to a maximum of 30 dollars a month. Since I could not find a job, I decided to go to college and thus postpone the day of reckoning.

So I went to college, with the help of a private citizen who paid my tuition, my sisters who paid my board and room, and the National Youth Administration which paid my readers. I mention the readers because they, too, were pursuing careers. The NYA paid them 25 cents an hour to read my books and reference materials to me. The main trouble was that, throughout my four years of college, two out of three readers were girls. This gave rise to all kinds of problems of time and place of reading. Need I go any further? (Yes, I married one of the girls.)

The second time I looked for work was during summer vacations. I remember going to Lerner's, the women's clothing store. They needed someone to do something mysterious in a back room at 50 cents an hour. There were about two hundred other people looking for whatever the job was. For them, the job was crucial in terms of supporting a family. My chances were nil, so I went away—to sponge on my sisters again.

I finally finished college and the time came when I had to look for a job—for the third time. This was rather traumatic. I had received a teacher's certificate, but at that time no school system in that state would accept a blind person as a teacher. I concentrated on private institutions, like military academies. They told me that if there was a problem of a disciplinary nature, and if the teacher were blind, parents would say the school was at fault, not their child. As it happened, I never became a public or a private school teacher, but I did get a job teaching journalism at the same college from which I graduated.

About three years later, I left the university to go with a newspaper full time. This meant eighteen hours a day, six days a week—altogether a heck of a sight more work than should be expected for the $150 a month it paid. I decided to go into work for the blind, where a fellow can make more money with a little less effort.

I spent a year trying to find jobs for other blind people and, if I do say so myself, did pretty well at it. I should tell you that at the time of my graduation from college, I had turned down the offer to run the vending stand in the Jacksonville, Florida post office. It promised an income of 25 dollars a week, which was not bad, but I thought it beneath the dignity of a *cum laude* college graduate. When I later took over the state-wide management of all vending stands, I found that the Jacksonville operator was earning twice as much money as I was, and his dignity was in real fine shape.

So, what with one thing and another, I landed in 1949 in New York City with the assignment of executive director of the American Foundation for the Blind and the American Foundation for Overseas Blind. I now have resigned, and that is why I am looking for work for the fourth time in my life. To be serious, I am not really looking for a job, since I will continue for a number of years with the Foundation on a part-time

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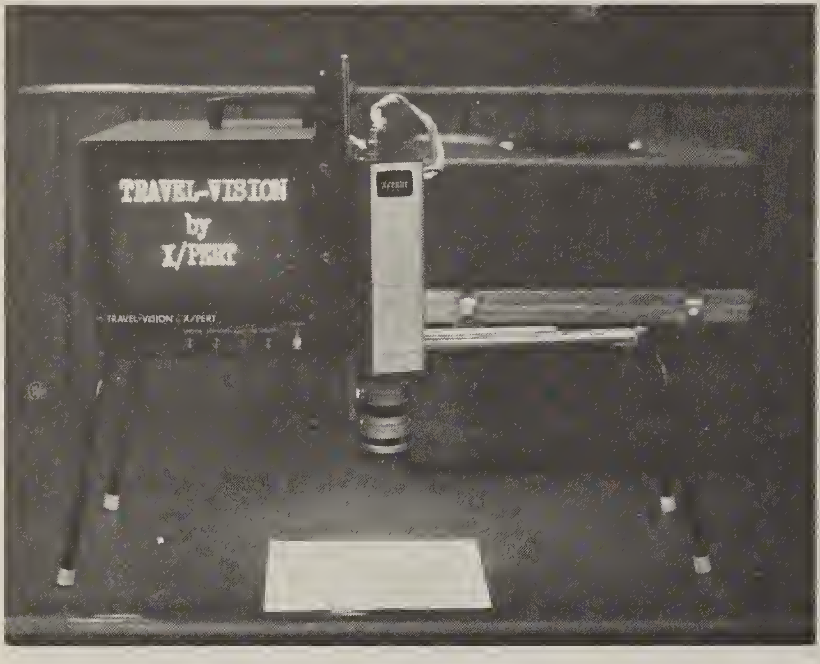

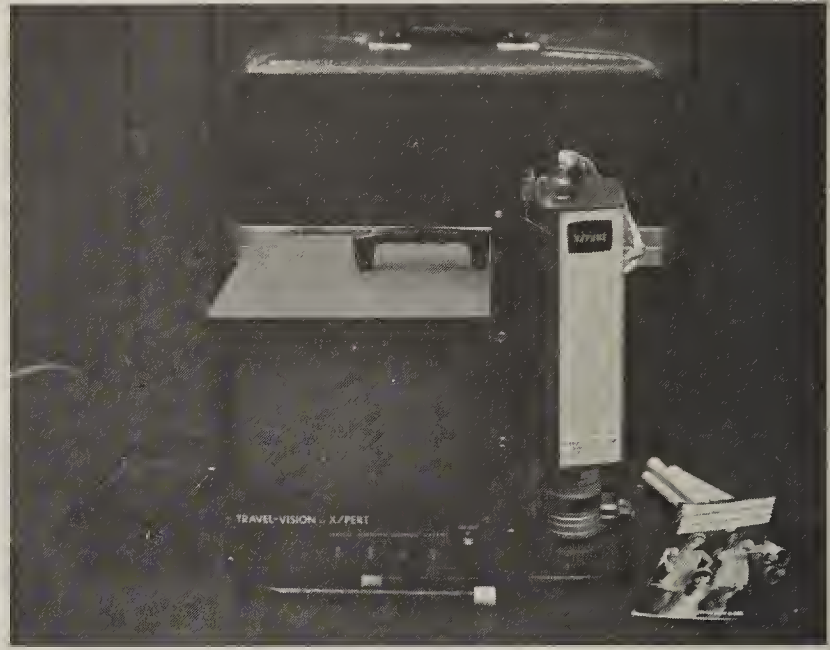

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basis. As I said earlier, I am not unemployed, just underemployed. I expect to spend some time fishing, and my youthful experience in cleaning fish will come in handy; but, except for eating the fish, there will be no monetary reward.

My part-time work for the Foundation will involve some experimental fund-raising and consultation on program development here and abroad. When that and the fishing become boring or financially inadequate, I just might consider other consulting assignments on a short-term basis. If anybody knows of a need for an expert, let me know. My dossier—when I have one printed up like other people do—will list such expertise as chicken plucking, cotton picking, watermelon loading, and the eating of jelly rolls.

Remind me sometime to tell you about the time I was an assistant floorwalker in a W. T. Grant department store, since this magazine is censored. Further, since this is the first of a new year, may I close with a quote from a Washington cab driver: "May the Lord let his face shine upon you—and me."

Review

A Matter of Inconvenience, produced by Stanfield House (900 Euclid Avenue, Santa Monica, California 90403), sound, color, 16mm, ten minutes. Rental: $20; purchase: $150.

Reviewed by Douglas Inkster

The impact of a physical impairment on one's life is as varied as the personalities involved. Adapting and accommodating to limitations resulting from such an impairment can be heroically inconspicuous or dramatically displayed. *A Matter of Inconvenience* portrays how motivation and innovation enable amputees and blind individuals to participate in the sport of skiing. The film is successful in illustrating that a disability involving the amputation of one leg does not have to be a handicap to the individuals who have a strong desire to become skilled skiers. The film is an utter failure in attempting to illustrate that an individual who suffers a loss of sight can share that achievement.

The amputees were extremely proficient skiers and "hotdogged" down the hill in a professional manner. By contrast, the blind skiers were rank beginners requiring excessive coddling and direction. Contrary to the purpose of the film, to dispel the stigma of the disabled, the viewer is left with the typical stereotype of the young blind individuals who require very special techniques and a protective environment to succeed, even in a mediocre fashion.

The film makes no contribution to the rehabilitation field as its sole purpose is to show that amputees and blind people can perform on the ski slopes. There is no effort to describe teaching techniques, the psychological factors, or special safety precautions to be observed in opening such activity to these groups. The film will probably be impressive to a general audience who might be surprised to know that amputees and blind people can ski. The danger of a film of this kind is the tendency to show handicapped people as oddities because they have an interest in an activity that would seem to be beyond their capabilities. We all know of the paraplegic pilots, the blind scuba-divers, the quadraplegic artists, and "peg-leg" Bates. These people, at best, are viewed as very talented individuals and, at worst, as freaks. I'm sure there are a number of people who make the assumption that because one impaired individual can do something, another can also, without any regard to individual interests, aptitudes, or native abilities.

The producer might well have spent an additional five minutes developing the basic requirements for becoming a successful skier. This might have included the motivations, the skills, and the sequence of training required to become proficient in skiing as an amputee or as a blind person. The script might then have followed an individual through this process to the point where he or she becomes a competent skier. Only with these additions would the film be of value to the classroom teacher, rehabilitation centers, or teacher in-service training programs.

In summary, it is this reviewer's opinion that the film would be of interest to community groups, parent groups, and public film libraries. It appears to achieve its purpose of demonstrating that a single-leg amputee can become a proficient skier; however, it fell far short of achieving this same purpose for the blind.

Dr. Inkster, director of the New York Infirmary Center for Independent Living, is himself an amputee.

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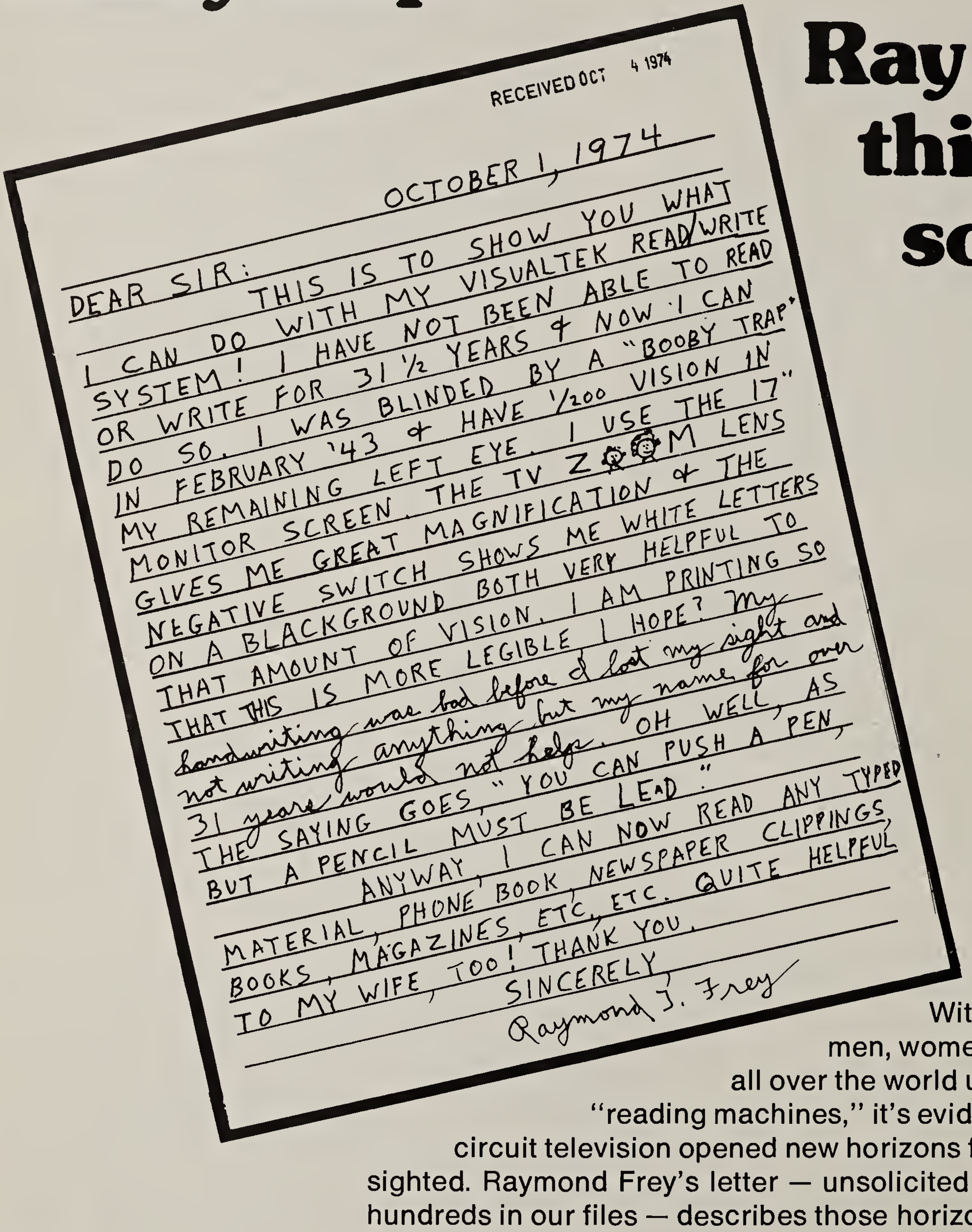

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Comment

Reading and the Multiply Handicapped Blind Child

A. James Nezol

It has been ten years since Lloyd Dunn (1964) reported "a decrease in the proportion of children with single disabilities and an increase in the proportion with multiple disabilities" (p. 39). This trend has continued and has been particularly evident in education programs for visually handicapped children. Effectively barred from entry to most residential and day school programs for children with sight limitations, multiply handicapped blind children are being admitted in increasing proportions today. As early as 1967, Wolf (1967) found that 85 percent of residential schools for the blind were accepting multiply handicapped blind children and 92 percent were reporting increasing demands for services for these youngsters.

Such a trend demands a reappraisal of traditional program content and methodology. Of special concern is the teaching of braille grade 2 to the largest group of these children, those who are mentally retarded. This practice is widespread (Wolf, 1967; Graham, 1968), but its wisdom will be questioned here.

Grade 2 braille, with its illogical and nonphonetic assignment of contractions, has received much deserved criticism. Some of the most serious are: 1) Unsystematic introduction to children. Basal readers are the most popular method for beginning reading; since teachers of blind children use braille editions of basal texts developed for sighted youngsters, contractions are introduced too haphazardly and too quickly. By the end of first grade, an average of 44 of the 185 grade 2 signs have been encountered in basal readers (Hooper, 1946). 2) Slower reading time. Contracted forms required more reading time than uncontracted forms for almost all youngsters in a sample of blind high school students studied by Nolan and Kederis (1969). 3) Frequent disregard of syllabication (Loomis, 1948). 4) Complicated rules which assign meaning on the basis of the position of a symbol in a word in a sentence. 5) Dual spelling or requiring a word to be presented in its contracted form under certain circumstances and in full spelling in other circumstances. 6) Similar contractions or assigning a configuration one meaning in the upper part of the cell and another in the lower part. 7) Nonphonetic character of the system (Rex, 1971).

Compelling as these arguments against the use of grade 2 braille for beginning reading may be, there are additional questions regarding its use with children who are mentally retarded. Consider the following: 1) Braille word recognition time averages 33 percent greater in elementary and 111 percent greater in high school for readers of low intelligence than for their brighter peers. Contracted words are considerably more difficult for this group (Nolan & Kederis, 1969). 2) Comprehension of braille material is much lower for low ability students (Steele, 1971). 3) Mentally handicapped children are often deficient in their ability to attack words phonetically (Dunn, 1964). Thus, a highly nonphonetic system like braille grade 2 would be especially difficult for them.

The popularity of braille grade 2 is historically based. Multiple tactile reading systems competing over decades resulted in wasteful duplication and consumer confusion. In the United States, a moderately contracted form of braille, grade 1½, was official from 1918 to 1932 as the controversy raged on. In 1932, English braille grade 2 became the accepted code, thus ending what Irwin (1955) called the "war of the dots" and "the battle of the contractions."

Initial teaching of reading continued to rely on grades 1 (with no contractions) and 1½ (with 44 contractions) however. This required children to learn many words in three different forms and was confusing. Pressure from educational leaders forced the American Printing House for the Blind to transcribe even the earliest reading books into grade 2. Although no evidence of its superiority was ever accepted, grade 2 became the exclusive code for all school use.

Some hard questions need to be asked. Here are some of those questions and some tentative answers:

Q. Is grade 2 braille superior to grade 1½? A. Grade 2 saves considerable space over grade 1, but only 12 percent more than grade 1½ (Irwin & Wilcox, 1929). Its tested reading time of 53 to 78 words per minute is not significantly different from speeds recorded for grade 2 (Athern, Campbell, & Lavos, 1944; Niday, 1939; Lowenfeld, 1945). Other evidence of superiority is not apparent.

Q. Is grade 1½ superior to grade 2? A. Yes, in four ways: 1) it eliminates the most objectionable contractions; 2) it eliminates the most frequent sources of error; 3) it lends itself much more fully to a phonetic approach to reading; and 4) it is probably within the learning capacity of a much larger percentage of multiply handicapped blind children.

Q. Is phonics really a problem? A. Yes. As suggested by Maxfield (1928), the blind child: 1) must build a whole from its parts, 2) is greatly disadvantaged in his attempts to glance beyond unfamiliar words to judge meaning fron context, and 3) needs phonics to help him work out pronunciation of new words.

Q. Is grade 1½ the only alternative to grade 2 braille? A. No. Listening, other tactile systems, and electronic aids are also possible.

Q. What advantage has listening as a reading medium? A. Studies suggest that it is much faster for younger and slower students (Armstrong, 1966; Nolan & Kederis, 1969). Steele (1971) found *more* learned in about one third the time spent reading braille.

Q. Then why not use listening exclusively? A. It is not suitable for material requiring concentration or constant rereading of short portions, such as mathematics.

Q. What are the possibilities for other tactile systems? A. Good. Kederis, Seims, and Haynes (1965) found omission of 63 contracted forms of grade 2 would incraase space less than one percent. The only advantage of grade1½ over other possible systems is that it is already developed.

Q. What about using electronic aids? A. Devices like the Optacon and the Stereotoner are coming into use. They are expensive and

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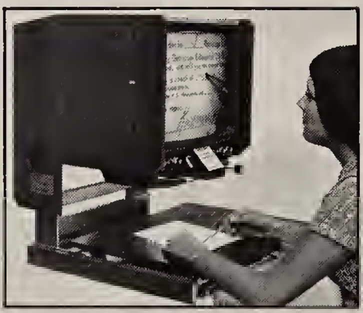

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generally thought of as supplementary to braille. Training programs would probably not be effective for the majority of the multiply handicapped. Future possibilities are at least fair, however.

Q. Are there any other possibilities? A. Yes. Use of extensive supplementary materials for those youngsters learning braille grade 2 with basal readers may help (Rex, 1970).

Braille grade 1½ was abandoned at a time when multiply handicapped blind children were barred from most education programs. With the ever increasing trend to serve these children, a reconsideration should be made. Many mentally retarded and slow learning blind children are being hopelessly frustrated attempting to use as a tool a system they cannot adequately master. It is time for us to reassess. Perhaps braille grade 1½ or some alternative system should be made available to multiply handicapped blind children and adults and to late-blinded persons for whom grade 2 is too complicated.

Expediency may tell us that having two systems of braille is too wasteful because so much duplication will be necessary. Let us not use this as an excuse to deny the needs of a significant minority of our blind population. We must be realistic if our services are to be really meaningful.

Dr. Nezol is assistant professor of special education at Illinois State University, Bloomington-Normal.

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Letter to the Editors

To the editors:

As a blind person, I feel that the times in which we are now living are tremendously exciting in view of the remarkable advances made in technological research. Such advances offer new and better ways of doing almost everything, and thus the rate at which an individual must change to keep in step with his world has greatly increased. As blind people, we have a responsibility to keep up with these advances, and to see that agencies which serve the blind are informed about all new technological developments which might aid the blind. We have the right to demand that agencies serving the blind change in accordance with the world around them, but we can only do this if we ourselves are well informed.

As agencies become more and more informed about technological research, they have a responsibility to the blind people that they serve to evaluate such devices as are produced. After doing so, they then also have the responsibility to support the further development and production of those devices which they deem useful to the blind. Our society is not so organized to offer sup-

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port to the individual inventor, and thus, without support of agencies serving the blind, such devices offered by individuals often go without funding, and thus often die. At a recent gathering of persons involved in work for the blind several new devices for the blind were shown by a local inventor. It was discouraging to see how few of the possibly influential persons in the group even stopped to look at what was being shown. Can this be considered anything but chosen ignorance about such developments?

Federal funding is offered to several agencies throughout the country specifically to further the research and development of devices to aid the blind. However, many of the devices for the blind produced in the last decade were not produced by these agencies. Among these are the Optacon, various speech compressors, the laser canes, and the thermoform machine. Is it not the responsibility of blind people and the responsibility of agencies serving the blind to demand that these federally-funded agencies keep up with the times? Should they have not been the ones to offer such devices to the blind?

So I ask, are we traveling with our brakes on? And, if we are, are blind people actually receiving adequate services?

Pat Pound
Austin, Texas

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Mary Maie Richardson, head librarian.

Understanding Children Who Are Partially Seeing: A Classroom Teacher's Guide, by Martha G. Sullivan. Special Child Publications (Bernie Straub Publishing Co., Inc., 4535 Union Bay Place, N.E., Seattle, Washington 98105), 1974, 34p. $1.50. The author is supervisor of special education, Howard County Department of Education in Clarksville, Maryland. Her brief manual explains the nature and effect of various types of visual loss, discusses the classroom setting (seating, lighting, etc.), and the use of special equipment, material, and methods.

Body Movement and Verbal Encoding in the Congenitally Blind, by Thomas Blass, Norbert Freedman, and Irving Steingart. *Perceptual and Motor Skills* (Box 1441, Missoula, Montana 59801), Vol. 39, No. 1, Part 1, August 1974, pp. 279-293. Report on part of a study which examined the prevalence of object- and body-focused hand movements of ten congenitally blind individuals (17 to 21 years of age) engaged in a five-minute monologue task. The hand movements were analyzed to determine their relationship to verbal performance. Requests for reprints should be addressed to Box 88, Downstate Medical Center, State University of New York, 450 Clarkson Avenue, Brooklyn, New York 11203.

Do You See the Buffalo? by Susan Bliss. *Performance* (The President's Committee on Employment of the Handicapped, Washington, D.C. 20210), Vol. 25, No. 3, September 1974, pp. 4-8. Description of the Carroll Rehabilitation Center for the Visually Impaired in Newton, Massachusetts.

A Center for Human Development, by Ted J. Rakstis. *The Lion* (Lions International, York & Cermak Roads, Oak Brook, Illinois 60521), Vol. 57, No. 4, October 1974, pp. 14-17. The story of the Center for Blind Children, a Lion-sponsored school in Milwaukee, Wisconsin. The school was established in 1967 for the training of multiply handicapped blind children.

What, Then, Is a Houseparent? by Rowena Glass. *The Florida School Herald* (Florida School for the Deaf and the Blind, St. Augustine, Florida 32084), Vol. 73, No. 9, May 1974, pp. 1-3. A houseparent describes some of the problems she encounters and the variety of roles she fills as a dormitory teacher.

Training for Independence and Leisure, by J. Childs. *The Teacher of the Blind* (Royal School for the Blind, Church Road North, Wavertree, Liverpool, L156TQ, England), Vol. 62, No. 4, Summer 1974, pp. 116-128. Report on results of a British survey. Two questionnaires were distributed, one to schools for blind and partially sighted and a second to young people (aged 18 to 25) who had left the schools during the last ten years.

Crossing the Atlantic Does Make a Difference, by Harold Snider. *The New Beacon* (Royal National Institue for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 58, No. 688, August 1974, pp. 203-207. The author, an American who recently returned from a five-year stay in Britain, compares the British blind welfare system with that of the United States.

The Beginning, by David Swerdlow. *The Rehabilitation Teacher* (The National Braille Press, Inc., 88 St. Stephen Street, Boston, Massachusetts 02115), Vol. 6, No. 9, September 1974, pp. 3-14. The author relates his thoughts and observations concerning the Vacation Camp for the Blind in Spring Valley, New York. He has spent a 12-day vacation there every summer since 1950, the year in which he became completely blind.

Stevie, the Wonder Man, by Maureen Orth. *Newsweek* (444 Madison Avenue, New York, New York 10022), Vol. 84, No. 18,

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The Go-Sees, 166 East 92nd Street, New York, New York 10028

October 28, 1974, pp. 59-62, 65. Cover story in this issue is an interview with rock star Stevie Wonder.

The Lighted Heart, by Elizabeth Yates. William L. Bauhan, Publisher (Dublin, New Hampshire 03444), 1974, 251p. $3.95. A soft-cover edition is now available of this book, originally published by E. P. Dutton & Co., Inc. in 1960. It is the personal story of the author and her husband during the difficult period of adjusting to his blindness.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information are desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Agency Administration

The Voluntary Agency—Structure vs. Accountability, by Ruth Fizdale. *Social Casework* (Family Service Association of America, 44 East 23rd Street, New York, NY 10010), Vol. 55, No. 8, October 1974, pp. 478-483. "True collaboration of board and staff requires that all decisions about use of funds, program, and policy changes be considered and acted upon jointly."

Consumer Feedback: Tiny Tim Is Dead! by Harold Remmes. *Rehabilitation Literature* (National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Ave.,Chicago, Ill. 60612), Vol. 35, No. 10, October 1974, pp. 298-300. The author is project director of the Consumer Advocacy Project, Massachusetts Council of Organizations of the Handicapped, Inc., Boston.

Management Training: Meeting Administration Needs and Goals, *by* Raymond Fox. *Public Welfare* (American Public Welfare Association, 1155 Sixteenth St., N.W., Suite 201, Washington, D.C. 20036), Vol. 32, No. 2, Spring 1974, pp. 41-46. A description of the use of the Institute model for training key staff as it was tried experimentally by Catholic Charities, Diocese of Brooklyn.

Attitudes and Adjustment

Social Stereotypes: Three Faces of Happiness, by Paul Cameron. *Psychology Today* (P.O. Box 2990, Boulder, Colo. 80302), Vol. 8, No. 3, August 1974, pp. 62-64. "Research among the physically and mentally handicapped, and among various age groups, turns up surprising answers. As tough as happiness is to define, one thing is certain. Money helps more than anything."

Films

Meeting the Challenge of Blindness. The Seeing Eye (Office of Public Information, Suite 1912, 1 Rockefeller Plaza, New York, NY 10020), 16 mm, color, sound, 28 minutes. A documentary showing how four blind persons successfully met the challenge of blindness.

Medicine

Diseases That Should Not Happen. Medical World News (1221 Avenue of the Americas, New York, NY 10020), Vol. 15, No. 35, September 27, 1974, pp. 33-35, 39-42. The story of how parental apathy and the reluctance of some physicians to "sell" vaccination may add up to future epidemics of such preventable diseases as polio, measles, mumps, rubella, diphtheria, tetanus, and pertussis.

Pamphlets

Washington: The City for Everybody. Washington Area Convention and Visitors Bureau (1129 20th St., N.W., Washington, D.C. 20036). A handy guide to the sights in the Nation's Capital that have been designed, adapted, or equipped to accommodate handicapped persons.

Careers for the Homebound: Home Study Opportunities. President's Committee on Employment of the Handicapped (Washington, D.C. 20036) and B'nai B'rith Career and Counseling Services (1640 Rhode Island Ave., N.W., Washington, D.C. 20036), 16p., free. A listing of accredited home study schools, with an index by subjects and a bibliography of further resources.

Services for Special Needs. A free, 24-page booklet describing the services offered by the Bell System for its physically handicapped telephone users. Available from local Bell Telephone business offices.

Periodicals

Near Point. The first issue of this newsletter of the Low Vision Clinical Society (121 East 60th St., New York, NY 10022) is dated September 1974 and includes information about the society (which was founded in 1972), news about the activities of low vision clinics, products, publications, and films, and announcements of the society's meetings.

Preschool Education

Blind Pre-School, compiled by Billie M. Taylor. Industrial Printers of Colorado (4923 Northpark Dr., Colorado Springs, Colo. 80907), $3.95. A manual for parents and educators compiled by a teacher at the Colorado School for the Deaf and the Blind.

Are Preschools Willing to Intergrate Children with Handicaps? by Molly C. Gorelick. Journal of Rehabilitation (National Rehabilitation Association, 1522 K St., N.W., Washington, D.C. 20005), Vol. 40, No. 4, July-August 1974, pp. 17-18. An article reporting on a project, "Careers in Integrated Early Childhood Programs," conducted by the Northridge Preschool Laboratory, California State University, to train personnel to staff integrated early childhood programs.

Research

Let's Reduce the Communication Gap: Guidelines for Preparing a Research Article, by Linda M. Crocker. *Physical Therapy* (American Physical Therapy Association, 1156 15th St., N.W., Washington, D.C. 20005), Vol. 54, No. 9, September 1974, pp. 971-976. The author is assistant research professor with the Rehabilitation Research Institute, College of Health Related Professions, University of Florida, Gainesville.

Sex Education

Sex Education Program Service Model for the Multihandicapped Adult, by Rose Cook. *Rehabilitation Literature* (see address above), Vol. 35, No. 9, September 1974, pp. 264-267, 271. This program at United Cerebral Palsy of Denver consists of seven components: recognition of need, personal awareness, board support, staff training, parental involvement, development of program services, and evaluation of the program.

Social Work

Looking Forward: Social Work Into the Eighties. A special issue of *Social Work,* the journal of the National Association of Social Workers (49 Sheridan Ave., Albany, NY 12210), Vol. 19, No. 4, September 1974. Includes: "The Future of Social Work: An Introduction," by Scott Briar; "The Place of Social Work in the Human Services," by Robert Morris; "Health Care: The Largest Human Service System," by Neil F. Bracht; "Decade of Decision for the Elderly," by Elaine M. Brody and Stanley J. Brody; "The Justice System and the Practice of Social Work," by Charels H. Shireman; "Children and Families: A Forecast," by Donald Brieland; "Racial Minorities in the 1980's," by James A. Goodman; "Developments in the Use of Organized Data," by William J. Reid; "The Economics of Social Welfare Programs," by Irwin Garfinkel; "Future Funding of Social Services," by Melvin Mogulof; "The Call for a Management Stance," by Jerry S. Turem; "Total Administration," by Murray Gruber; "Education Matures to the Undergraduate Level," by Joseph L. Vigilante.

Vocational Rehabilitation

Testing, Orientation and Work Evaluation in Rehabilitation. ICD Rehabilitation and Research Center (340 East 24th St., New York, NY 10010), 1974, $8.50. The third edition of the "TOWER" System textbook. A brochure describing the entire system is also available.

Welfare

SSI: Progress or Retreat? by Martha N. Ozawa. Public Welfare (see address above), Vol. 32, No. 2, Spring 1974, pp. 33-40. An evaluation of the new Supplemental Security Income for the Aged, the Disabled, and the Blind (SSI) program of the federal government by a research associate professor at the Center for Studies in Income Maintenance Policy, Graduate School of Social Work, New York University.

Here's a sound, low-cost way to COMMUNICATE EFFECTIVELY with the blind:

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News in Brief

■ A new periodical written and published by handicapped persons, *The Independent*, is being issued four times a year in print and recorded (cassette) editions by the Center for Independent Living, 2054 University Ave., Berkeley, California 94794. The subscription price is two dollars per year.

■ The San Juan National Historic Site, a unit of the U.S. National Park Service, is making its Spanish language official brochure available in braille. The braille edition was produced in cooperation with the Loaiza Cordero Institute for the Blind. The braille edition of the brochure is distributed free of charge to blind visitors to the Historic Site. Free copies are also available to agencies and institutions for the blind who have use for braille materials in Spanish from the San Juan National Historic Site, P.O. Box 712, Old San Juan, Puerto Rico 00902.

■ The U.S. Department of Labor has awarded a $68,000 one-year contract to the Blinded Veterans Association (BVA) to operate an Outreach Employment Program to give blinded veterans the opportunity to work with sighted persons as equals. The program, which will be headed by Dr. Dennis R. Wyant, national field director of BVA, will provide assistance to blinded veterans in the preparation and circulation of resumes, the improvement of job interview skills, finding leads to jobs, and matching potential employee with employers.

■ *Expectations*, an annual anthology in grade II braille for blind children in grades three through six, is available free of charge from the publisher, the Braille Institute of America, 741 N. Vermont Ave., Los Angeles, California 90029.

■ A University of Pennsylvania research group has recently issued a progress report on a controlled clinical trial of the use of vitamin E injections from birth as a means of preventing or easing the effects of oxygen-induced retrolental fibroplasia in premature infants. While the results of the use of vitamin E therapy are encouraging, the research group is not ready to recommend the use of vitamin E injections as routine treatment. Drs. Lois Johnson, David Schaffer, and Thomas R. Boggs note in the report that such variables as improvements in premature and intensive care in hospital nurseries may have had a subtle effect on their figures.

■ Now that Department brochures are available in braille as well as print, blind children are able to participate fully in the "Officer Friendly" program of the Chicago Police Department. This program, established by the Department in 1966 and sponsored since its inception by the Sears Roebuck Foundation, is designed to foster better understanding between children and the police.

■ The aids and appliances program of the American Foundation for the Blind has instituted several new features designed to improve customer service. They include charge privileges through American Express, Bank Americard, and Master Charge; separate direct telephone lines for aids and appliances orders and inquiries; and optional United Parcel Service delivery.

■ The Seeing Eye, Morristown, New Jersey, has developed a "talking" (auditory) map on cassette of its campus. The map, which is still in the experimental stage, was designed to be used by students as a supplement to orientation lessons.

■ *Psychology Today* is now making its interviews with well-known psychologists available on cassettes. Among the psychologists included in this series are Carl Rogers, William Glasser, and Rollo May. The subjects include non-verbal communication, reality therapy, transpersonal psychology, psychological testing, autism, and discrimination against women.

Each cassette is $6.95. Reductions are available on quantity orders. For more information, write Psychology Today Reader Service, P.O. Box 700, Del Mar, California 92014.

■ National Industries for the Severely Handicapped was incorporated in July 1974 as a private non-profit organization. It was established to give workshops for other severely handicapped clients an opportunity to work more closely with the Committee for Purchase of Products and Services of the Blind and Other Severely Handicapped in the same manner as does National Industries for the Blind.

■ A new consumer organization, tentatively named the American Coalition of Citizens With Disabilities, is in the process of being organized. For more information about programs and membership, write Cindy Walker, Acting Recording Secretary, c/o Center for Concerned Engineering, 1224 Dupont Circle Bldg., Washington, D.C. 20036.

- The Administration on Aging, in association with WRC-TV, the National Broadcasting Company owned and operated station in Washington, D.C., has produced a series of ten television programs on aging. The series has been seen on the NBC owned and operated stations in Washington, New York, Los Angeles, Chicago, and Cleveland during the past few months and will be shown on stations affiliated with NBC in the coming months. For more information, write National Clearing House on Aging, Administration on Aging, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

- The New Jersey Department of Civil Service is now giving special help to handicapped or disabled persons hoping to take Civil Service tests. Serious impairments, such as severe visual loss, will be listed on candidates' Department record cards. Personnel in the examining unit will be notified in advance of the test date that special arrangements will have to be made for these candidates. Candidates with visual impairments will be given 50 percent additional time to complete the test and will be assigned readers or markers.

- The Jerusalem Bible version of the Gospels according to Matthew, Mark, Luke, and John, and the Acts of the Apostles is now available in large print for two dollars from the Xavier Society, 154 East 23rd St., New York, N.Y. 10010.

- Researchers at the State University of Buffalo recently reported new evidence that links diabetes mellitus to the virus that causes mumps. The research team, which was headed by Dr. Harry Sultz, professor of epidemiology at the State University of Buffalo, reviewed the case histories of 118 children in Erie County, N.Y., who had developed diabetes mellitus over a 20-year period from 1947 to 1967. Half had had mumps about four years before their diabetes became evident. Eleven percent had received a live mumps virus vaccine. These findings tend to support suspicions—which have been reported in the medical literature for over 70 years—that diabetes mellitus may be an infectious disease. The Buffalo researchers, however, caution that as yet little is know about what can or should be done about this possible causal relationship.

Appointments

- The Seeing Eye, Inc.: **Thomas D. Duane, M.D., Ph.D.,** and **John R. McCoy, V.M.D.,** membership on Grants Advisory Council.

- South Africa Guide-Dogs Association for the Blind, Johannesburg: **Daniel N. Wood,** principal, orientation and mobility school.

Awards

- Pilot Club Handicapped Professional Woman of the Year 1973-74: **Rose Resnick,** executive director, California League for the Handicapped.

- Data Processing Management Association "Computer Sciences Man of the Year": **Edward L. Glaser,** head, computing and information sciences, Case Western Reserve University. Mr. Glaser is blind.

- Carroll Award, American Association of Workers for the Blind, New England Chapter: **John F. Mungovan,** commissioner, Massachusetts Commission for the Blind.

Deaths

- **William L. Dauterman,** head, comprehensive service for the blind and visually impaired program, Los Angeles City College, on August 19, 1974.

Coming Events

January 14-15 National Braille Association, Regional Meeting and Workshops, St. Petersburg, Florida.

February 26-March 1 International Conference of the Association for Children With Learning Disabilities, New York City.

April 16-17 American Geriatrics Society, 32nd Annual Meeting, Miami Beach.

April 20-26 Council for Exceptional Children, 53rd Annual International Convention, Los Angeles.

April 24-29 Association for Research in Vision and Ophthalmology, Annual Meeting, Sarasota, Florida.

May 5-8 National Braille Association, 13th National Conference, Milwaukee.

June 15-19 American Medical Association, 124th Annual Meeting, Atlantic City, N.J.

June 15-21 American Physical Therapy Association, Anaheim, Cal.

June 20-23 American Association of Workers for the Blind, Biennial Meeting, Atlanta.

June 21-22 International Federation on Ageing, Third Conference, Jerusalem.

June 22-27 Tenth International Congress of Gerontology, Jerusalem.

Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display—$13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, 15 West 16th Street, New York, N.Y. 10011.

AIDS AND APPLIANCES

Aud-a-Reader. Battery-AC disc player for 8-1/3 and 16-2/3 rpm. $40.00. SFB Products, Bala-Cynwyd, Pa. 19004.

Instruments, Recreation Equip. Sound or print catalog. Science for the Blind Products, Bala-Cynwyd, Pa. 19004.

BOOKS

Teach and Reach: An Alternative Guide to Resources for the Classroom, By Barnes, Eyman, and Engolz ($3.50). For teachers who want to humanize regular and special education. Human Policy Press, Box 127, University Station, Syracuse, New York 13210 (add 20¢ postage and handling).

CATALOGS

Optacon Catalog—products and services—a complete listing of Optacon Systems, Accessories, Training Course, and Training Material prices. Products are also pictured and described in detail. Write Telesensory Systems, Inc., 1889 Page Mill Road, Palo Alto, California 94304.

Aud-a-log, new 90-min. soundsheet catalog (8-1/3 rpm) of instruments for blind and visually limited. Free. SFB Products, 221 Rock Hill Rd., Bala-Cynwyd, Pa. 19004.

PERSONNEL

Situations Available

Visualtek needs part-time sales representatives in certain areas of the U.S. Interested? Write Sales Department, 1610 26th Street, Santa Monica, CA 90404.

REHABILITATION PERSONNEL
IN A.A.W.B.

Liability Insurance Program

A Professional and Personal Liability Insurance Program for A.A.W.B. rehabilitation personnel in private or public practice, including student members, is now available through the American Association of Workers for the Blind. It provides low-cost protection against claims resulting from either alleged malpractice or personal negligence.

FOR COUNSELORS

Another Liability Insurance Program, sepcifically designed for rehabilitation counselors, is also available through the American Association of Workers for the Blind.

For more information and enrollment forms for both programs, contact the national office.

AMERICAN ASSOCIATION OF WORKERS FOR THE BLIND, INC.
1511 K Street, N.W., Washington, D.C. 20005

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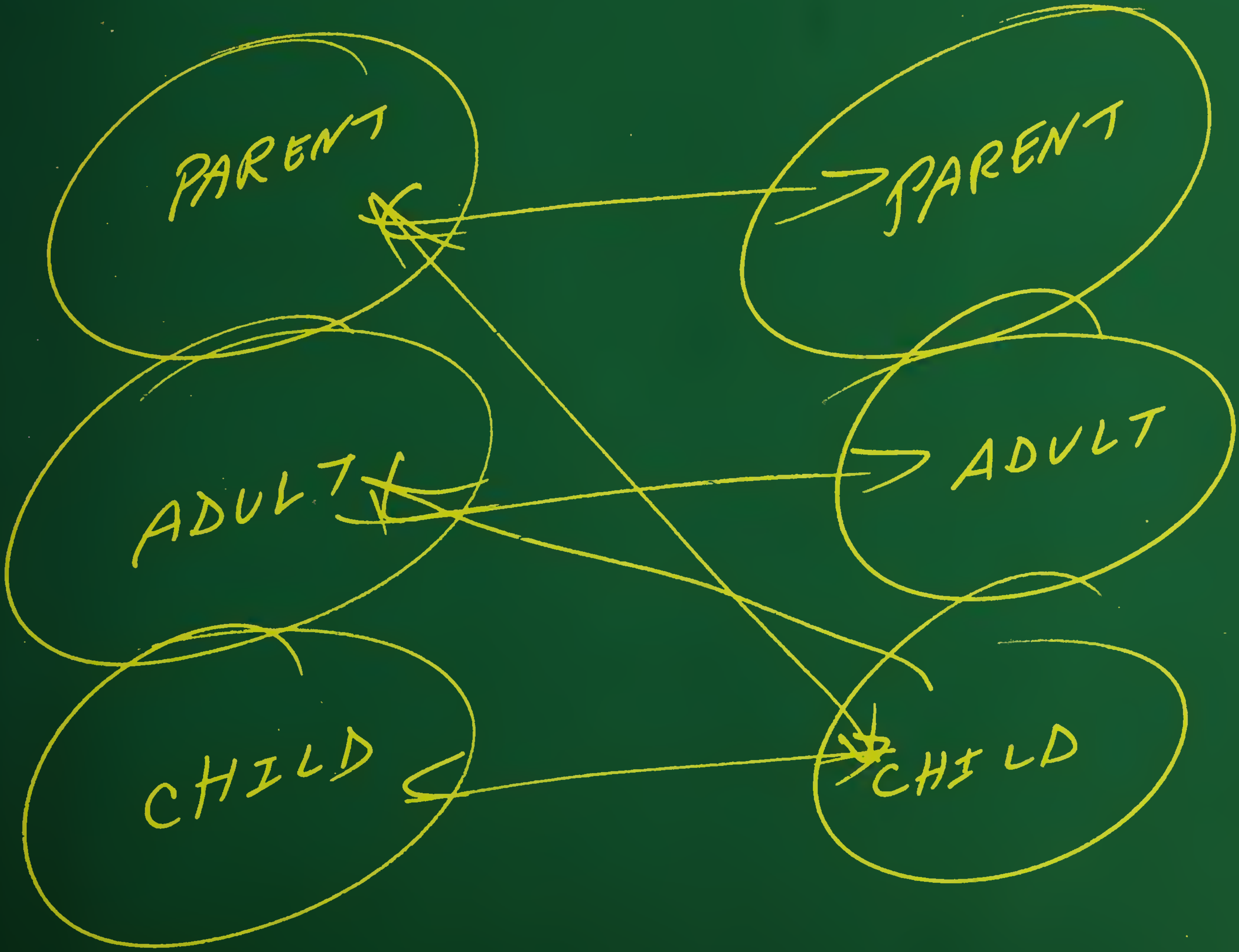
THE NEW Outlook FOR THE BLIND

February 1975 Volume 69 Number 2

USING TRANSACTIONAL ANALYSIS IN REHABILITATION



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Research Resource Needs for the Future

LESLIE L. CLARK

Mr. Clark is director, International Research Information Service, American Foundation for the Blind, New York.

ABSTRACT: This overview of the past, present, and future of research and development related to severely visually impaired persons covers the following subjects: documentation, creation of an armamentarium of aids (including both ordinary and highly sophisticated devices), the financing of R&D, the problem of technology transfer, dealing with change, the need for better theoretical models, and new definitions of the reality in which severely visually impaired individuals and those who work with them and for their benefit find themselves.

Introduction

In the somewhat more than a decade since the International Research Information Service (IRIS) was established, a good many changes have occurred in research and development. No longer does one have occasion to complain, as we did not too many years ago, of the "vast wasteland" of sensory aids that were technologically sophisticated, but ill-suited to the uses that humans put them to (Hedqvist, 1963). Quite beyond the notable achievements represented by the serial production of two viable reading aids (the Optacon and the Stereotoner), a brace of high-speed braille embossers (the Triformation LED-120 and the MIT Braillemboss), and a very sophisticated mobility aid (the Kay Binaural Environmental Sensor), there has been a veritable explosion of research related to sensory impairment and blindness (Gill & Tobin, 1974). Nor has basic research been neglected altogether. Important undertakings to understand mobility behaviors are now under way in Nottingham, England; Christchurch, New Zealand; Louisville, Kentucky; San Francisco, California; and in several other locations (Armstrong, 1973; Kay, in press; Foulke, 1971; Collins & Madey, in press). Even evaluative research, that underdeveloped orphan child of applied research, has enjoyed at least the beginning of that tender, loving care that alone will insure its adequate development (Tobin & James, in press; Bliss, in press; Elliott, 1966; Elliott, Elliot, & Raskilly, 1966; *Mobility . . .*, 1966; Goldish & Taylor, 1974).

Some progress

Taken together, these several developments give us reason to be pleased at the progress that has been won, though the effort and frustrations involved have been very great indeed. Perhaps the most notable achievement in the field has been the development by researchers of a most unusual persistence in the face of obstacles, along with an unusual toughness and flexibility in dealing with the problems of translating research into practice.

Past trends

I have been lucky enough, during this period, to have been in a position in which I could see the trends over time in the development of most of the major themes in research of the last ten years. The decade began with what seemed

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This article is based on a paper presented at the Fifth World Assembly, World Council for the Welfare of the Blind, Sao Paulo, Brazil, August 7-16, 1974. The original paper will appear in the official proceedings of the meeting.

almost insuperable obstacles to our understanding of the processes of reading, of mobility, and of the achievement of a satisfying style of life. It will close with a deepened understanding of reading behavior (Genensky et al., 1972; Page, 1974; Kolers, 1972), a major advance in our understanding of mobility behavior (Kay, 1974), and a beginning application of what we Americans regard as the "European" notion of rehabilitation—the restoration of a style of life to the adventitiously blinded, and the creation of a satisfying style of life for congenitally blind persons.

Master trends of the future

So far, I have stressed the investment of effort and the maximal utilization of rational planning. These factors indeed helped shape the major trends of the past few years. They are equally important as factors in creating, shaping, and guiding the master trends of the next five to ten years, for no one could deny that we have still much to do requiring both effort and reason. If we are actively to shape the master trends of the future, in a world very different from the one we knew only a decade ago, then this effort will require all our cleverness, our best use of reason, and a firm will to succeed.

Documentation

☐ If there is any aspect of the world-wide conduct of research to which IRIS is sensitive, it is to the need for information in written form—the record of our time-binding activities which make ours truly one world. Just as no one center—like IRIS—could hope to cope with all the correspondence, all the personal visits, all the latest information on what researchers are doing, so no one information collecting and processing center can hope to cope with the immense variety and complexity of work now under way in our field. We have made some beginnings in the attack on the problem, and we have suggested some partial solutions to the problem of satisfying researchers' "need to know" (Kent, Stevens, & Clark, 1972). And we hope to extend and revitalize our capability to cope with the many areas of research within the United States, in particular, by a loose network of information exchange among its major documentation centers (Clark, 1974). We have also noted with very great interest the growth of other specialized information centers: for special education at Birmingham, England; for rehabilitation in Leipzig and in Heidelberg; for rehabilitation legislation at the International Labour Office (ILO) headquarters in Geneva; and for technological development, in Stockholm, and in Coventry, England. Nor are we lacking a great and regnant cognitive structure under which we can subsume all these efforts, eventually, for there is, though it is only just beginning, the theoretically ambitious and sophisticated program of UNESCO to coordinate the world's information resources (UNISIST, 1971). For some time, it appeared as if information control was a convenience for the researcher and for the practitioner; we simply needed to know who was doing what so that we could minimize effort and keep the total costs of research and translation into practice as low as practicable. These motivations still obtain, of course, but gradually the awareness has grown that without some way to keep track of what has been done, what is being done, and what thinking informs the plan to put into practice what has been learned, we shall compound the mistakes of inept translation into practice, inappropriate inference from investigations, and the creation of a false sense of confidence

Information centers

in our understanding, that have obtained in the past. To the degree that we gain skill in undertaking research—both "basic" and "applied"—then to the same degree do our needs for appropriate information control grow and deepen. I think there is a growing understanding that the help of professionals is needed here, whether or not we use machine-aided techniques of information control; and this is a hopeful development, since it will, at the same time, facilitate cooperation among documentation research centers in several parts of the world.

Armamentarium of Aids

☐ One of the healthiest developments of the last ten years has been the growing realization on the part of sponsors of research and development efforts that there is no single solution of "the mobility problem," or "the reading problem," or, indeed, any other "problem." We began to suspect the reasons why in an early evaluation of one mobility aid, in which some vaguely-defined "personality factor" appeared to play an important role in its acceptance or nonacceptance by potential users (Deatherage, 1965). In some later work this insight was sharpened by our understanding that there are differences from individual to individual in their "tolerance for ambiguity." But the most important insight is that there is not now, nor is there ever apt to be, a solution for any one of the "problems" facing blind and severely visually impaired persons that will be satisfactory to every user of a sensory aid. Consider the hail of controversy over the "optimum" design of a closed-circuit television reading aid for the visually impaired: it is not the commercial motivation of individual manufacturers of CCTV aids that has resulted in such a plethora of widely differing designs, but, at least in part, their desire to satisfy the needs of "the visually impaired" (considered as a unitary population) which has ensnared and deluded them. Thus, even for a population of (relatively) well-defined users, there is room for a good deal of variation in a simple design consisting of camera, control mechanisms, and display. No one should be surprised that for populations less well defined there should be a similar, or greater, disparity of needs for mobility and reading aids.

Danger of a too narrow approach

There is something almost mystical about the search for "the" solution to the problem of transducing visual information for those not having vision into other sensory forms (tactile, auditory, and so on). And even highly experimental inquiries, like that of the introduction of electrical signals directly into the occipital cortex, have been seized upon both as "the" solution to the problems of blindness, and as a reason for blunting the development of more mundane solutions to the several problems of interacting with the world that blind and severely visually impaired persons face. Stated generally, the silent assumption appears to be " . . . if we can just wait a little longer, then X will be well enough developed that it will solve all the problems of Y." You may choose to insert for "X" any sensory device you might care to name; and for "Y" any of the "problems" that blind persons generally are supposed to have.

From prototype to usable aid

Yet we do have at our disposal the means and the knowledge to make a significant, even revolutionary, impact on these "presenting problems": by carrying out vigorously the transition from prototype to actual sensory aids, both complex and simple, in the hands of the consumer who needs them, especially those that have been developed to date, but which have never made this transition. Decisions are required concerning what level of effort to invest in what sensory aids, of course; for some the decisions are easier than for others, and for a few there are hardly any decisions to be made at all. If we were to make a concerted effort in the next decade to make available a range of sensory aids for blind and severely visually impaired persons, we could literally make an enormous difference in the comfort, ease, and pleasure with which such persons could live and work in the world; the personal rewards of satisfaction and sense of accomplishment would be incalculable. Nor is the goal idealistic: we have the means and the capability to make such an effort, and to bring about such a result.

"Gebrauchstechnik" vs. "Systemstechnik"

☐ The composer Paul Hindemith celebrated his creation of "workaday music" (*Gebrauchsmusik*) to distinguish it from the abstract and "absolute" symphonic literature. In borrowing and adapting his term, I intended "Gebrauchstechnik" to mean the range of "everyday aids," in contrast to "systems technology" from which complex sensory aids derive. Note that although the same research and development process applies to both, everyday aids require but a truncated version of the iterative process by which mobility and reading aids (e.g., the binaural spectacles and the Optacon) are created and refined. Indeed, the differing length of the process for each class of aids, and the widely divergent nature of the problems entailed in the production of each, leads naturally to regarding them as essentially separate matters. I think it time that we face the consequences of regarding these classes of aids as requiring comparably differing approaches in the development process. The most important difference between the two is that although the first class of aids could be developed within the "blindness system," using largely its own resources, the creation of the products of systems technology absolutely requires going beyond that point; it implies the engaging of knowledge specialists in the university, the research institute, and the larger governmental laboratories, albeit in an atmosphere of cooperative relationships.

A cooperative effort

It would seem that the best use of the resources both of blindness organizations and of the knowledge-generating sectors of our culture can be served by realizing that these differences exist and must be worked with, not merely struggled against. The true realization of the potential in systems technology transfer cannot be made unless the blindness system is prepared to accept the definition of problems proposed by technologists, to engage in joint undertakings of research and development, and to open target populations in sufficient numbers to make possible realistic evaluations of technological products; similarly, technologists must face the need to learn the definitions of presenting problems at the level where they operate for the individual, to respect the political sensitivities of the blindness system, and to accept modest goals when a more ambitious one is resisted by that system. The burden of learning is lopsided here, since we have proof that technologists can learn the intricacies of blindness organizations and their populations, whereas we can expect but limited understanding of the potentials of technology on the part of a technologically naive user community. Still, this would be all the more reason for patience and good will to be cultivated on both sides, if for no other reason than that both technologists and blindness organizations hope to provide useful results for the same ultimate group of consumers.

Risk and Investment Capital

□ From a biostatistical point of view, blindness is relatively rare. From a human point of view, there is no human affliction requiring more sophisticated applications of knowledge to make up the sensory deficit. Thus, the creation of sensory aids for blind persons represents the most significant test case for the management of biomedical engineering. Unfortunately, it also represents the classic situation of biomedical engineering: namely, the very high cost of application of systems technology to relatively very small populations of users. Classical market research strategies simply have limited applicability in such circumstances: as a first "best estimate" of market possibilities they do nicely, particularly when no such effort has been previously undertaken (Goldish, 1972; Goldish & Marx, 1973).

The UK's NRDC

Countries other than the United States have faced this situation rather realistically, and one of the most outstanding solutions found so far has been the National Research and Development Corporation (NRDC) of the United Kingdom. I shall not discuss the specific arrangements entered into by the NRDC in its easement of difficulties in the translation of research into practice (they are, in any case, available elsewhere), but rather I should like to extract a general observation about such translation that I think is truly "value free" so far as any political implications are concerned. The difference I am interested in is between risk and the allocation of investment capital, and the role that such sums may play in the research utilization process. It is clear to all those who have participated in it with endless frustration that the current system of making the rounds of possible sources of funds for each specific instance of development of sensory aids is wasteful and ultimately self-defeating; few sensory aids manage to survive the process successfully (granted, the process "weeds out" some unsuitable candidates, but some worthwhile candidates fail as well). I would hope that the next decade will see an extension and adaptation of models like the NRDC in the developed countries in which risk capital could be invested in promising, but early, research (probably in applications of systems technology) for the production of sensory aids; and investment capital could be enlisted for the production of everyday aids. What is implied is a *relatively* centralized source of such monies and, of course, suitable review of proposed investments. I think that these requirements imply a resource of national scope, even in the United States, and most assuredly in other developed countries; perhaps one might hope for the creation of such a source for the European Economic Community (EEC).

Centralized funding

Without such a motivating force to fuel the entire research and development process, the deployment of most sensory aids to the user will be seriously blunted. If we are to carry out the notion of providing an armamentarium of sensory aids, both products of "Gebrauchstechnik" and of "Systemstechnik," then such a resource will almost certainly be required. And in a world which, since 1973, has grown in its realization of the interdependence of nations on one another, and the cost of manufacturing their needs, this course of thought might represent a rational course of funding the development of sensory aids.

Technology-Intensive, Slow Production

☐ Allied to some of the problems mentioned above is the curious situation obtaining for sensory aids which are complex, relatively expensive to produce, and needed only in small quantities over a rather long period of time. The most frequent examples arise in the area of measuring instruments for electronics technicians who cannot use visual displays, although the situation is not unique to them. A production line in the usual sense cannot be established for these devices, since the demand is low. One is almost forced to a solution based on custom-assembled and custom-tailored devices matched to an individual's requirements—almost, but not quite, since the number of instruments required (especially for a world market) is large enough to merit some rationalization of production.

Self-help network

At the moment the population of technicians who need such instruments is served, though badly, by a network of self-help whose existence is surprisingly little known, either by the visually impaired population or by those who run organizations for blind persons. The "community" of technicians attempts to meet the need for instruments by maintaining basement workshops in which some of them modify and repair equipments for others, until they realize how inefficient this is and the workshop discontinues its operation until the need is so strong someone else tries it again, with the same ultimate result; and so on.

The clear realization that a probably permanent subsidy for the production of technology-intensive, complex, and costly, devices produced in small quantities is necessary would go far toward making these instruments available over the long term to those who need them when they need them. We have an obligation to solve this problem for that important portion of the population of blind persons who have the knowledge and capability to use best the products involved: servo-controlled measuring devices for electrical circuits, components of radio sets, specially adapted instruments for television servicing, and so on.

Optimizing Technology Transfer

☐ I speak here not only of technology, but of the results of research in general. By focussing on technology, however, it is possible to emphasize the importance of *shared* knowledge concerning the social options opened up to us for change and accommodation by technological achievements. As an example of what is involved, consider the efforts of the last ten years to solve the difficult, albeit chronic, problem of "enhancing the availability of braille" (Mann, 1963). We are just now beginning to pass that threshold into a domain in which the technological products are available to make a considerable impact in making braille materials accessible to as wide an audience as could use them. Now we face the difficult task of assessing the consequences of choosing high-speed embossers over direct translation systems, of tapering off braille production to match its present audience, of encouraging its use among a larger population as the sole means of establishing literacy among those not able to read print, and so on. In making these choices, or better, in deciding upon the "mix" of technologies that will accomplish the result we want, the blindness system can only receive advice and consultation from the technologists; the decisions that will affect the blindness community still have to be made by that community. Without understanding the issues and consequences in all their richness and complexity, we are likely to make inappropriate choices with which we and the blindness community will have to live for years to come. For these very practical reasons—and quite apart from the matter of achieving technological literacy—it would seem imperative that the next decade see the training and hiring of persons skilled in the understanding of research utilization, including technology utilization, throughout the blindness system. To date, the blindness system has been in the position of supplicant to experts who do not share its interests in serving specific population segments of the blind and severely visually impaired. Yet the involvement in transferring research products that could enhance the style of life of blind persons has now gone far enough that the capability for deploying those products is the proper concern and responsibility of those who serve this community of persons. The World Council for the Welfare of the Blind could make a start of some importance in this area by employing a technical officer of the highest qualifications in its own headquarters—an example which, one would hope, would be copied.

Specialists in research utilization

The Rational Allocation of Change

☐ Only the presence of qualified persons within the blindness system can aid in the achievement of a reasonable allocation of resources and innovative practices among the several subpopulations making up what we loosely describe as "the blind and severely visually impaired." Some observers in the United States appear to have been surprised to discover in the analysis of the blindness system in our country by the Organization for Social and Technical Innovation (OSTI), that there were several subgroups of the blind population not at all served by the blindness system (Schon et al., 1971). Although it is now generally agreed that by far the greatest proportion of the blind comprises those over 60 years of age, it also appears agreed in retrospect that there are other important subgroups of the blind population not served by the blindness system. Among them are the multiply impaired, ethnic minorities, those two-thirds of the blind not known to welfare agencies—in general, most of those who are not otherwise impaired (blind only), educable, and potentially employable. An equally large number of visually impaired persons is also not usually encountered.

Technology and the unencountered

If the choice were made to encounter everyone with serious enough visual difficulty that work or leisure activity is impeded, it is likely that the blindness system could not cope with the onslaught of demand for its services. Stringent definitions of "blindness" do not eliminate this problem, but merely relegate it to the domain of the unobserved and unrecognized. Yet in the next decade we could decide to encounter, or try to encounter, these persons. We would probably find among them many applications for products of research that at present go begging for application: the optimum design of closed-circuit television reading aids, new procedures for teaching language and reading, innovations in computer-aided instruction, instruction techniques for the optimal use of the gradually increasing leisure time resulting from the shortening work week in the developed countries, and so on.

The effort of thinking through the consequences of these new challenges would, perforce, press us toward consideration of the admittedly limited resources of money, time, and personnel that we can allocate to the several subpopulations involved. But I suggest that the effort is potentially one of the most rewarding we could undertake; its immediate result would be a heightened awareness of our allocation of resources to research and to practice.

A "Critical Incident" Test of Technological Innovation

☐ We have come a long way since, with poetical and invigorating insight, former WCWB president, Charles Hedqvist, challenged the world to mount a more rational attack on the sequelae of blindness; in 1962, Hedqvist suggested that blindness might well be viewed, in one sense, as a "technical disability" (Clark, 1963). The notion was that if the lack of visual input was what characterized the liability of blindness, then all we need do is to make up the deficit in information input to the blind human, and he could function as well as his sighted colleagues. Admittedly, the formulation side-stepped the profound human consequences of blindness, but at least it emphasized the crucially important differences between visual impairment (a measurable deficit in visual function) and visual handicap (the *social* reaction to that impairment on the part of others). It also clearly implied that, with cleverness, we could hope to make up the visual deficit by technical means, and thus erase the negative social reaction to impairment. It further hinted that a whole panoply of technical means might be required to make up that deficit, but that meeting the challenge was well within our capabilities.

Armamentarium is required

Put in the baldest possible terms, this hypothesis has never been truly put to the test. Nor can it ever be until we have come to the point at which that "armamentarium" mentioned above is at hand. We have some reason to suspect that the outcome would be favorable; one study concluded that with comprehensive technological and training support, blind persons tend to behave like their sighted neighbors, by every reasonable social index employed (Graham et al., 1968). In the somewhat more limited sphere of vocational preparation, reports from Heidelberg encourage one toward the same conclusion (Fichtner, 1973).

The next decade

The means are now near to hand to flesh out the fantasy that Hedqvist and many others could only suggest. The next decade could bring us closer to answering this crucial question on the utility of technological intervention in the amelioration of the sequelae of sensory impairment in a highly significant way. It should go without saying that for at least *some* of the subgroups in the "blind" population, the benefits of technological products will go far toward erasing the social distance between "the blind" and the sighted. For how many of the subgroups, and to what extent, are important questions that we cannot at present answer. Yet it is crucially important to answer them, since only with this information at hand can we make those necessary and sometimes painful choices about how much we can allocate to effect change among what sectors of our population—and to what extent must we turn to other ways of effecting change in the lives of people with sensory and other impairments. The need for this kind of information is crucial both for research and for practice, and it will require considerable thought and wit to interpret—surely an enterprise to engage our best talents, within and without the blindness system.

Monitoring Change

☐ As part of the challenges facing us in the next ten years, the matter of assessing what we have accomplished, and planning best to remedy what we have overlooked, is one that catches us least well prepared. What is involved is a clear understanding of that much used, but still most often abused, term: evaluation. Stated simply, we do not have yet the technical and intellectual means to undertake very good assessments of the consequences of introducing change—either in the lives of persons to whom we offer sensory aids or new services, or in terms of the subsystems of the blindness establishment we alter to make these changes come about. Put another way, we have yet to create those rational structures to monitor and to assess the results of innovative change, both technical and social, that we seek to accomplish. In some cases, as in the design of mobility aids, we cannot make such assessments because we do not have an adequate theory; in this particular case, we can expect a striking improvement in our intellectual understanding in the next few years. In fact, in a recent publication, the first step has been taken toward finding a solution to the problem of creating an adequate theory of mobility (Kay, 1974). In other cases, we cannot make such assessments because we have not yet specified with sufficient precision what it is we wish to accomplish; what, for instance, is the optimum choice for a system of delivery of services to the visually impaired and blind population (Schon, 1970)? Finally, we cannot make such assessments because there is insufficiently general appreciation of the need for persons to be charged with this task among the organizations involved. (A notable exception to this situation, in educational research, is the Research Centre for the Education of the Visually Handicapped, University of Birmingham, England, directed by Michael J. Tobin.)

Mobility theory

A systems analysis of change

Another way of stating the requirement in this domain is to say that we have yet to make explicit what we do and why we do it, in a context in which all the affected persons are accounted for; this is a "systems analysis" task, of a sort, that will merit the investment of a considerable effort. What will be required is the proper engagement of other domains of knowledge—including educators, rehabilitation specialists, and consumers—both in effecting change and in tracking and evaluating the consequences of such change. Pollyannas are not wanted; not all change may be to the good; perhaps some attempts to change should be scrapped. But unless we keep careful accounts of what to do, how can we tell whether a change is useful or not, or whether a proposed change has failed for the right, the wrong, or for indifferent reasons? Perhaps the attempt to teach "speed reading" in tactile displays will be a useful technique—for some, under some conditions. How else will we be able to tell unless we specify what is meant by "reading," what is meant by "speed," how the techniques taught are used, whether they continue to be used, and what the results are over a fair period of time? How else can one settle the controversy between whether one should provide a universal reading device capable of detecting the output display of all (or almost all) electronic calculators, or develop a special-purpose electronic calculator with a tactile or auditory output for blind persons?

Broadening the base of R&D

What is suggested here is really the expansion of the proper conduct of the research and development process to encompass not only the population of technologists and researchers, but also the training community and the community of users, in a series of "feedback loops" that will continually inform earlier steps in the process of translation of knowledge to the practice domain. In the proper conduct of the process, we shall be required to develop those evaluative tools and understanding that can help build a priceless resource for both the research and the practice communities; and there is a considerable commonality of interest among groups of people involved, including the ultimate consumer.

Creating Theoretical Models

□ In considering the creation of theoretical models, the last of the required needs I foresee for the next decade, I shall merely reflect and amplify upon a matter already touched upon in these comments; and perhaps I shall reflect in part one of my special prejudices. It is that without the creation of explicit theoretical models to guide us—in the development of mobility aids, reading aids, etc.; in introducing social change; in optimizing human functioning in the presence of sensory impairments; and so on—we are doomed to the repetition and waste and frustration that has characterized so many of our efforts in the past. It is not merely that those who ignore history are doomed to repeat it, although that is a sad enough consequence of ignorance. More generally, however, without a theoretical model, we have a tendency to overlook the obvious, or simply not to know wherein our ignorance lies; we are thus likely to ascribe the success or failure of our enterprises to factors which may or may not be operative. This, too, may be harmless, until one tries to use "past experience" as a guide to future action; if we then construct our action on the basis of factors presumably contributing to the success of a past endeavor, which were nonetheless irrelevant, we find ourselves at a loss to understand why our new undertaking has failed.

The beginnings of theories

If it were true, for example, that the processing of visual information consists in a reduction of retinal images to prototypical cortical representations (*Urbild*), then the task of creating a viable mobility aid depending on tactual display or cortical stimulation might be considerably simplified; if it were not true (or at least insufficient), the task is considerably more complex. We now have reason to believe that the proposed solution is oversimplified in the extreme, and that mobility in the human is a considerably more complex process; and we know this from the gaps in a theoretical model proposed by Leslie Kay (1974) of the University of Canterbury. In another example, a project founded on the best intentions of providing employment for blind persons did not succeed because, in part, it failed to take account of the fact that the involved employment for blind persons did not succeed because, in part, it

Delivery of services

failed to take account of the fact that the involved employment niches represented jobs vacated by sighted persons moving up in the social structure; and that blind persons, whatever their origin, were proposed as replacements regardless of their feelings and knowledge of the facts. As another example, consider the optimal organization of the delivery of services, a matter often embroiled in controversy in the conflict between special interest agents of the blindness system and general rehabilitation agents working for all impairment and disability categories. Will the addition of an ombudsman for impaired persons make a difference? What about the use of vouchers or scrip in the hands of the ultimate consumers of services? How can one decide among alternatives without reasoned trial and experiment, and a careful accounting of experience which leads to testable generalizations or deductions from generalizations? And yet, without some change in the delivery of services and the structures meant to serve this end, how can the blindness system ever hope to cope with the onslaught of the silent populations it means to encounter in the years ahead?

A New Challenge

☐ The discerning will note that this collection of apparently disparate topics actually tends toward a common ground—indeed, toward that cleverness, best use of reason, and firm will to succeed referred to at the outset of these remarks. The definitions of reality upon which by far the largest proportions of the organizations in the blindness system have operated during the last several decades are by now some 50 to 70 years old; at the beginning of the twentieth century, the major causes of blindness were ophthalmia neonatorum and industrial accidents: hence our continuing emphasis on the educable young and the employable adult (Scott, 1967). Some perturbations to this conceptualization of reality occurred with the onset of demands from veterans blinded in wars, and from articulate, suasive, and politically salient parents of babies blind from retrolental fibroplasia. Similar and potent perturbations are beginning to be felt from the onslaught of those afflicted in the cyclically-recurring rubella epidemics; and a growing pressure will be felt from the absolute increase in the number suffering from genetic defects having blindness or severe visual impairment as one of the outcomes. But during it all, a beseiged community of interest has had all it can do to "take care of" those it purported to serve. In this climate, the blindness system has been content to receive help as and when it could from outside sources, leading to the growth of scientific advisory bodies and the undertaking of applied research in university and research institute settings. Limited to *Gebrauchstechnik,* these arrangements allowed a certain muddling through. They are no longer adequate. The diffusion of technological understanding, a new appreciation of the complexity of the presenting problems of blindness, plus the demand that the applications of scientific understanding match more closely the needs of the population purported to be served—all these elements combine in new definitions of the reality in which we find ourselves, one demanding in turn a new and sophisticated allocation of our intellectual and human potential in answer to far more complex and fresh approaches to a wider variety of problems attendant on the consequences of visual impairment and blindness. Nor do the old distinctions be-

Responding to new demands

tween "basic" and "applied" research, or between "research" and "practice," serve us as well as they used to; it came as a surprise to many to discover that the most difficult research problems were presented by the simplest questions the blind person could ask about what could be done for him—and it is equally surprising that, upon examination, much of what passes for "solid experience" in rehabilitation generally rests upon a tissue of loosely woven experience, gaps in knowledge, and mere prejudice. The requirements for "best practice" now infringe more and more on the outcome of research undertakings; and the adequate accomplishments of applied research encroach more and more on the domains of our most extended scientific understanding in many allied fields. ☐ It would appear appropriate to acknowledge these new definitions of the world in which we live and, by mastering them, to mount a fresh attack on the prospect of using all our skills, our understanding, and our sympathies in the creation of all the opportunities for the realization of optimal human functioning of visually impaired and blind persons that are possible. The next decade provides us with fresh opportunities to meld the communities of research, of practice, of consumption of knowledge that exhilarate men of ideas and men of action in a possible common enterprise of the highest order of human achievement. It is a prospect well worth consideration.

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Establishing Realistic Case Loads for Rehabilitation Teachers

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ABSTRACT: For budgetary purposes, program planning, and more effective teaching, it is important to determine the size of rehabilitation teaching case loads. A suggested formula for teachers providing home instruction, based on a two-week teaching cycle, establishes the number of hours available for instruction by subtracting travel time and preparation time from the total number of hours in the teaching cycle.

Need for Accountability

Administrators of both governmental and private agencies are having to respond increasingly to demands by budget bureaus, legislatures, and boards of directors for social services cost accounting. These demands are based on the assumption that the public has a right to know how many units of a particular service can be purchased with a specified number of dollars. As a segment of the social service system, work for the blind will be expected to refine its existing financial accounting systems and to develop new, more reliable ones.

Cost accounting systems

The development of cost accounting systems in work for the blind must be a cooperative endeavor involving accounting and management experts on the one hand and professional workers for the blind on the other hand. Persons trained in modern business practices can provide the technology for reporting to the public in a form which can be analyzed quantitatively. It is the responsibility of workers for the blind to interpret their work to the fiscal experts and aid them in the design of accounting systems which do not restrict the delivery of services and which foster sound professional practice and humanitarianism in service delivery.

Case accounting system

Purpose

I have long been concerned with the need for a case accounting system for rehabilitation teachers. Such a system is necessary to guide agency administrators in determining rehabilitation teaching case loads and to provide legislatures and other agency governing bodies with reliable data for program planning and decision making. My first effort to initiate the establishment of a case accounting system was the appointment of a Committee on Rehabilitation Teaching Ethics and Practices during my term as chairman of Group III of the American Association of Workers for the Blind. This committee gave a comprehensive report on factors affecting case load management (published under the title, "Guidelines in Case Load Management," *The Rehabilitation Teacher*, March, 1972) but stopped short of suggesting a system for determining the size of rehabilitation teaching case loads. The purpose of this article is to describe such a system for rehabilitation teachers working in the one-to-one teaching relationship.

Components of the System

☐ The work of the rehabilitation teacher is particularly suited for the development of what is often referred to as a case load weighting system. Rehabilitation teaching offers a defined set of courses such as handwriting re-education, typing, braille, physical orientation, and homemaking. Therefore, if we are to arrive at an accurate accounting of a teacher's work load, we must consider the total number of subjects being taught as well as the actual number of people receiving instruction.

Institutional hour

Teaching cycle

The basic production unit of the rehabilitation teacher is the instructional hour. This is the amount of time allocated to each subject during a visit to an individual student. A teaching visit to one student may consist of one or several instructional hours, according to the number of subjects being taught to that student. The teaching cycle is the number of days required to visit all active teaching cases and to teach each student all subjects in which he is enrolled. The establishment of a teaching cycle which allows the teacher to visit each student often enough to ensure continuity of instruction, satisfactory progress through the course of study, and integration of the required skills into the student's life style is a paramount factor in effective case load management. Ideally, the teaching cycle should provide for semi-weekly lessons, but this is not always feasible in field teaching programs in which a teacher provides service throughout several counties. From conversations with rehabilitation teachers in various sections of the United States, I have formed the impression that most teachers visit students every two weeks, while some visit on three, four, or even five-week cycles. Since experience seems to indicate that effective rehabilitation teaching can be done on a two-week cycle and since present supplies of manpower and resources in many agencies do not permit any drastic reduction in the size of teacher case loads, the two-week cycle will be used for illustration purposes.

Travel time

Preparation time

In any teaching program in which there is home instruction, travel time must be considered as a definite part of the teacher's work schedule. Administration needs to arrange for periodic time studies to determine the average travel time necessary to complete the teaching cycle. This average travel time can then be subtracted, along with the other non-teaching functions, from the working day to determine how many instructional hours are available. (Many rehabilitation teachers report that they utilize travel time for performing non-teaching functions such as keeping records and reading professional literature.) Preparation time, as defined here, includes visits to students for developing rehabilitation teaching plans, making lesson plans, keeping records, conferences, and other office routines. Like travel time, preparation time is subtracted from the total work hours in the teaching cycle to determine the number of instructional hours available.

Determining the Caseload

☐ We cannot accurately determine the work load of a rehabilitation teacher simply by counting the number of people receiving instruction. It is necessary to know not only how many people are receiving services but how many services these people are receiving. If during the two-week teaching cycle one teacher has 10 students receiving a total of 40 instructional hours, while another has 20 students also receiving 40 instructional hours, both teachers have approximately the same work load. (I say "approximately" because it is likely

(Continued on page 85.)

An Eye to Change: Transactional Analysis in Rehabilitation

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ABSTRACT: Transactional analysis (TA) is being introduced to the fields of disability and rehabilitation. It differs from other approaches in its emphasis on educating clients; concentrating on present behaviors; the active, action approach of counselor and client; the therapeutic contract; and having fun. Human hungers for stimulation or strokes, life position, and time structuring are discussed and related to blind persons. The four forms of analysis (structural, transactional, game, and script) are presented with examples relating to blindness and with a sampling of some of the techniques of analysis. Some of the efforts to apply TA to rehablitation by the authors and others are discussed briefly.

John, a congenitally blind young man recently graduated from a nearby college, sits on his front lawn surrounded by concerned neighbors. John has missed the first step down from his porch and taken a nasty fall. Mother runs to help him to his feet and nurture her boy just as she tended his frequent hurts in the past. Why did John, who has talked about improving his cane technique, maneuver this dangerous transaction?

Symbiosis

John and Mother had discussed for hours his getting a job. Mother offered suggestion after suggestion, each neatly countered and rejected, until she felt frustrated and resentful and John felt thoroughly useless and guilty. These two have spent their years together like the halves of an emotional yo-yo, bobbing up and down on a string of guilt, resentment, and atonement. The pattern of their symbiotic relationship has remained consistent throughout, like scenes from a dramatic script.

Ambivalence

When the eagerly awaited Johnny was pronounced "Blind on Arrival," Mother was overcome with ambivalence and guilt which she denied by overprotecting her baby. Father withdrew, as usual, to let Mother take care of the problem. The harder she tried to make it up to her son, the more burdened and resentful she felt. As Johnny grew up, her resentment slipped out in frequent criticisms of his inadequacy. Yet the more she persecuted, the guiltier she felt and the harder she returned to her "helpless" son's rescue by doing things for him that he could do himself. As he let his autonomy drift away, John felt resentful himself and struck back at her by remaining dependent in many ways. He refused to learn to use his cane efficiently, setting the stage for the fall from the porch which started another cycle of their victim-rescue-persecution drama. Transactional analysis (TA) offers an effective way to end this repetitive, self-defeating, and futile relationship.

What is TA?

☐ TA is a method to help John and his Mother gain the understanding, acquire the skills, and develop the strength to be responsible for their own feelings, thoughts, and actions. They can take charge of their lives—John can learn to take care of himself; Mother can learn to let him. TA originated with Eric Berne, M.D., in the 1950's. It has since become a popular social movement, organized

History

by the International Transactional Analysis Association, which teaches the principles of TA to many thousands. TA is being applied by professionals, paraprofessionals, and laymen in such diverse settings as clinical offices, businesses, churches, prisons, schools, hospitals, and agencies of all types and is now entering the fields of disability and rehabilitation.

Principles

Education

☐ TA offers a broad, coherent, integrative theory of personality development and functioning and a group of flexible, practical, and potent techniques for effecting change of behavior and attitudes. It differs from other types of counseling in several respects. First, it emphasizes educating clients. They are taught the unique, non-threatening language of TA; such terms as Parent, Adult, Child, stroke, transaction, game, and script are so disarmingly simple that even children understand them. Chalk-talks, on-the-spot diagramming of transactions, teach clients the dynamics of their behavior. Clients are encouraged to read the stimulating TA literature such as *Born to Win* (James & Jongeward, 1971), *What Do You Say After You Say Hello* (Berne, 1972), *Scripts People Live* (Steiner, 1974), *Games People Play* (Berne, 1964), and *I'm OK—You're OK* (Harris, 1967). For the blind, there are braille and recorded versions of some of the books as well as braille thermoform TA diagrams.

Interaction

Action

TA counseling also focuses on current, observable interactions. Unprejudiced presentations of self are preferred, so client files and test results are not stressed, avoiding self-fulfilling prophecies. A third emphasis is action. The involved counselor, sometimes directive, helps clients translate insight into behavior and behavior into insight. Improved functioning often occurs quickly, encouraging the client's hopefulness.

Contract

Hope alone is not enough. Direction, commitment, and responsibility are modeled and supported by the fourth feature of TA counseling, the contract. The counselor and the client bilaterally agree on the purpose for the treatment, the specific goals to be achieved, how these will be measured, and the responsibility each has in reaching them. This makes TA particularly useful wherever rehabilitation contracts are required.

Fun

Fifth, TA counseling is fun. There is no evidence demonstrating the therapeutic value of solemnity, whereas the healing effect of laughter has been experienced by everyone. Recognizing the Child within us, its need for stroking, and its importance in early, life-channeling decisions introduces a playfulness, excitement, and adventure into all problem-solving situations including vocational rehabilitation.

Human Hungers

Stimulation hunger

☐ TA identifies some basic human hungers; the most important is stimulation hunger, the craving for strokes. A stroke is a unit of recognition, a verbal or nonverbal transaction that says: "I know you are there." A positive stroke or "warm fuzzy" is modeled on the nurturing physical touch showered on an infant. Later this becomes social recognition like a friendly "Howdy," a fatter paycheck, a compliment, or a lover's caress. If we do not get or accept positive strokes, we will often seek recognition of our existence by collecting negative strokes or "cold pricklies." We will ignore a friend, "goof" a job, throw a temper tantrum, or, as in John's case, act inadequate. "Warm fuzzies" reinforce the winner feelings of "it's great to be alive" and "cold pricklies" reinforce the loser feelings of guilt, resentment, and helplessness. In working with John, the goal is to increase the positive stroke ratio, including self-appreciation strokes.

Position hunger

Position hunger is the need to know where we stand in relation to the world out there and to the people who live in it. Early in life each child interacts with his caretakers and decides his basic position in life along dimensions of "OK-ness": I'm OK—You're OK (healthy); I'm OK—You're Not OK (paranoid); I'm Not OK—You're OK (depressed); I'm Not OK—You're Not OK (futile).

When John was a vivacious and wiggly one-year-old, he got loads of strokes. But when his curiosity and development led him to explore his environment actively—an environment structured and interpreted by a sighted majority and seen by them as much more threatening to a blind child than it actually is—his transactions with his Mother became dominated by No-No's, Don't Run's, and You Can't Do That's. Johnny got the idea, finally: "I'm different. I'm not supposed to do anything out there. I'm not OK." Because of Mother's rescue/persecuting ambivalence, he also added—"and you're not OK either."

Time-structuring hunger

A third hunger is the need to structure the time between our birth announcements and our obituaries. The life position we adopt and the decisions we make, usually at an early age, to support that position determine the specific choices we make to fill our time, whether we play football or watch it, whether we play "Now I've Got You, You SOB" or "Kick Me." TA identifies six ways of structuring time. In order of increasing emotional intensity they are withdrawal, rituals, activities, pastimes, games, and intimacy.

Withdrawal

Rituals

Activities

Games

John, for example, can withdraw physically and psychologically from society through the segregating institutions set up to do things for him or he can withdraw through other means, like drinking. He may decline to do many things for himself because there are so many others ready to do them for him. Should he choose to withdraw, he will have less access to some rituals, like the stereotyped ways of relating at formal dinners, coffee breaks, or saying hello. Because of his own low expectations or those which others have for him, he may curtail activities like work or hobbies. John may engage in pastimes, ritualized surface communication around a particular subject, during which he tests other people out as prospects for further, more intense interaction through games or intimacy. John will share many pastimes with sighted people, such as "Man Talk" or "Morning After" (What a hangover!), where common experiences open doors to acceptance. Other pastimes, like "Mobility Training" or "Street Crossing," might be shared only with other blind persons. Through lack of experience or information, many sighted people feel uncertainty about mutual pastimes, like "Who Won" (sports) or "Did You See" (that show), creating social awkwardness and avoidance. John will play his favorite games, to be discussed later. It is hoped he will discover intimacy, those rare peak moments in life for both sighted and blind.

Forms of Analysis

☐ The goal in counseling is to become aware of our hungers (i.e., stroke patterns, life positions, and how we structure our time) and then to consider new options for change. To achieve this, TA focuses on four forms of analysis: structural, transactional, games, and scripts.

Structural Analysis

☐ In structural analysis three ego states, Parent, Adult, and Child, are analyzed. Berne defines these three building blocks of the personality as coherent systems of feelings and thoughts which are manifested in corresponding observable behaviors such as words, inflections, gestures, postures, emotional intensity, and facial expressions. Ego states are diagrammed by drawing three circles, one atop the other, representing, in descending order, Parent, Adult and Child.

Parent ego state

We are in our Parent ego state when we feel, act, or think as we observed our parents to have done. We replay tape recordings of our parents' behavior in our heads. We hear two types of Parent tapes: Critical Parent when we are punitive, dogmatic, or prejudiced and Nurturing Parent when we are sympathetic, nurturing, and caring. For example, from her Critical Parent, John's mother needled him about getting a job; later, from her Nurturing Parent, she might give him some encouragement or a new suit when he goes for his first job interview.

Adult ego state

We are in our Adult ego state when we act like computers, dealing with current reality, gathering facts, such as who, what, where, when, and how, and computing objectively. In rehabilitation, mobility and living skills training are addressed to the blind person's Adult.

Child ego state

We are in our Child ego state when the little boy or girl within us acts today as we did when we were children: as the free, spontaneous, demanding Natural Child of our births or as the compliant or rebellious Adapted Child resulting from our socialization. When John tumbled painfully from his front porch, his Adapted Child, without Adult awareness, had found a way to bring Mother to the rescue.

Goal

The goal of ego state analysis is to make the Adult the executor of the personality. For example, a sighted person whose Adult has been contaminated by his Critical Parent, leading to prejudice against the blind, or by his Adapted Child, leading to fear of the blind, can decontaminate his Adult through experience and information. Or the Adult can balance the awareness of someone who has forsaken fun by excluding his Child or avoided authority by excluding his Parent. John can learn to turn on his Adult and moderate his internal dialogues, as when his Critical Parent is beating up on his Natural Child with a not-OK message like "You can't do that, you're helpless."

Techniques

There are many useful techniques for analyzing ego states. For example, John can make an "ego gram," a bar graph representing the relative use of his Critical and Nurturing Parent, Adult, and Adapted and Natural Chid in his personality. If he finds that his Natural Child is unused, he may be asked to make a "fun list" of things he did as a real boy, then be given a homework assignment to do three of them. Or he may make a "want list" of things he really wants, like a girl friend, a stereo, or an apartment. In the five chair exercise, an adaptation from Gestalt therapy, he role plays each of the five elements of the ego mentioned above in order to experience directly how they influence his wants. This technique helps John de-confuse his Child, de-commission his Critical Parent, and decontaminate his Adult, allowing it to oversee the transactions engaged in by his Parent and Child.

Transactions

☐ Transactions are the second major focus of TA. The unit of communication is a verbal or nonverbal transaction or stroke exchanged between specific ego states of two people. If the transaction meets the expectations of the people involved, like an Adult request for information ("How do I get to Times Square?") met with an Adult response ("Go straight ahead two blocks."), then communication continues to completion. If a stroke is answered with an unexpected response, as when the Adult request for directions is met with a Nurturing Parent response like "Here, let me take you," communication may stop. The request for directions from the first person's Adult aims for the other person's Adult. The response, a discounting rescue, comes from the other person's Parent to the first person's Child. If a transaction involves hidden or double messages on two different levels simultaneously, such as a social level ("It's wonderful how you get around the way you do.") and a psychological level ("Poor blind man!"), future communication is unpredictable.

Between blind and sighted

The possible transactions between people, blind or sighted, is enormous. However, ambivalent or negative attitudes towards blindness limit the transactions between the blind and the sighted. While they do not share information about the world in identical ways, the differences in perception are often emphasized more than the similarities, creating a lack of transactional norms between them. For example, the sighted person in his Nurturing Parent, well-meaning but misinformed, may be overly solicitous and drag a blind person across a street he does not wish to cross. For the blind person resisting the cultural expectation that he is helpless, this poses a transactional "double bind": if he responds with an expected Adapted Child's "Thank You," communication continues at the sacrifice of his autonomy; if he responds with an unexpected Adult "I'm not going that way," he crosses the transaction and communication stops.

Remedy

Whether it is street crossings or career plannings, the remedy for such transactions is more Adult information and action. The sighted person's Adult can be strengthened through contact with the blind in schools, at work, and in social gatherings; by education through newspapers, magazines, television, and movies; and by confrontation in workshops on attitudes. The blind person's Adult can be tuned in to claiming his power by rejecting stereotypes, putdowns, and stigmatized roles.

Techniques

A useful technique in counseling is to diagram transactions, noting which ego state sends and which receives each message. To increase certain kinds of transactions, homework can be assigned, like saying "Hello" to three people or giving five good strokes a day. In TA groups with blind persons, eye-contact movements and body language vocabulary and grammar have been taught, as well as a fun Greeting Analysis. In the latter, participants all shake hands and say "Hello," role playing Child, Parent, and Adult greetings; they give each other immediate ratings and feedback, like "Squeeze harder" or "Relax a little." Eric Berne devoted a whole book to what happens after you say hello; for the blind, as for those with other disabilities, the problem is sometimes saying hello in the first place without getting caught in some kind of discounting transaction.

Games

☐ The third area of analysis in TA concerns becoming aware of the games we play, how we play them, and why. A game is a recurring and predictable series of on-going transactions involving hidden messages, played out of Adult awareness, and aimed at a payoff of bad feelings. These feelings, called "trading stamps," are colorfully identified as red for anger, blue for depression, brown for inadequacy, and gray for guilt. We collect our stamps by manipulating others, and when we have a sufficient number in our stampbook, we redeem it for a prize, like a good cry, being fired from our job, or, as in John's case, setting up an accident. Or we can save several books for bigger payoffs, like a divorce, hospitalization, or suicide. There are hundreds of games, some of seconds' duration (Ain't it Awful), others lasting a lifetime (Alcoholic). We play games for many reasons: to collect bad feelings, to fill time, to maintain comfortable old patterns, to justify our life positions, to further our life plan, and to avoid intimacy.

Roles

Games create the illusion of growth or change through drama or role reversals. There are three roles: the Rescuer, who appeases a not-OK Child by seeking superiority over victims who can be told how to act, feel, believe, or live; the Victim, who seeks rescuers or persecutors to reinforce his not-OK Child's feelings of helplessness and inferiority by being told how to live or how he is messing up; and the Persecutor, who seeks out victims upon whom to vent his not-OK Child's feelings of resentment and failure. The dynamics of these role reversals is best understood by envisioning a triangle, called the Rescue or Drama Triangle (Karpman, 1968), where each corner stands for a turn at one of the three roles. In a game, John and his Mother may switch dramatically among all three corners of the triangle, usually arriving at their preferred role or payoff for which the game is being played. Games played to arrive at the Victim position, for example, include "Wooden Leg" (What can you expect from a blind man?), "Do Me Something," "Kick Me," and "Poor Me." Games played to support Rescuer roles include "I'm Only Trying to Help You" and "What Would You Do Without Me?" Persecuting games include "See What You Made Me Do," "If It Weren't For You," and "Now I've Got You, You SOB."

Rehabilitation game

A common game played by counselor and client in rehabilitation is "Why Don't You—Yes, But." The client (Victim) "cons" the counselor (Rescuer) by making what seems to be an Adult request for help, like "I don't have any friends. What's wrong with me, anyway?" This "hooks" the counselor who begins to offer Adult suggestions only to find that the client rejects each of them. This goes on until the client perceives that the counselor is getting fed up (Victimized), at which point the client pulls the "switch": "You see, even you don't like me," thus becoming a Persecutor by putting the blame for his feeling unloved onto the counselor (now a Victim). There follows a period of confusion after which both players collect bad feelings. The counselor feels hurt (Victimized), then becomes angry (Persecuting) because his attempts to help have been averted, while his underlying belief that indeed people are ungrateful, is justified. The client has reinforced his Victim life position, feeling that "even my counselor doesn't like me," while his not-OK Child is gratified by the fact that he can thwart anybody who tries to help. This is the game that precipitated John's accident at the beginning of this article.

Rescue triangle

Some professionals can be caged by the Rescue Triangle, which subverts rehabilitation within what Beatrice Wright calls the succumbing framework (Wright, 1974), of some agencies, where the limitations of the disabled are focused upon; where the clients are seen as being dependent, limited, and passive; and where Rescuers and Persecutors know what is best for them. Other professionals deftly keep out of the triangle, even in the face of the tremendous challenge of working potently with clients whose games are being reinforced in many other contacts with family, friends, and strangers.

Goal and techniques

The goal of TA is game-free transactions. The transaction diagram is again an indispensable tool in analyzing games. Also useful is the rescue drama, where the client lies down on the floor and goes limp (Victim), while the counselor (or other client) tries to get him back on his feet (Rescue). This exercise, in which both participants experience rapid switches in roles, is an eye opener for the disabled, who have been encouraged to victimization by social pressures and expectations but who are not quite sure about what has happened to them or their part in it. Other useful tools are stroking circles, which involve practice in game-free, I'm OK—You're OK transactions. The self-confidence circle requires each person in turn to take ownership of his capabilities and OKness by completing the statement: "I like myself because . . . " The compliment circle, where each person in turn gives meaningful, sincere, positive strokes to others, confirms their OKness.

Script Analysis

☐ The most fascinating and vital part of TA is analysis of a person's script or unconscious life plan. According to TA everyone is born a prince or princess, but many, like John, change themselves into frogs by adopting a limiting script. Both the sighted and the blind often put on magical, distorting eyeglasses at an early age in order to make the best of the situation and survive the socializing demands of family and other authorities (who may have limiting scripts themselves). The Child makes premature decisions about who he is, who all those others are, and how he will live his life, often sacrificing some of his unique potentials as he accepts froghood.

Parental commands

John made a decision, "I'll be helpless," in order to follow his mother's unconscious command or injunction: "Don't do anything—unless I help you." His Dad showed him how by modeling passivity and withdrawal and letting Mom do it. John's decision was molded in transaction after transaction with his parents. When he tried to ride another child's tricycle, Mother rushed to his rescue, then scolded him severely. Father let her do it. Instead of teaching him how to use a knife and fork, Mother fed Johnny until he was five and is still cutting his meat at 23. Father just watches. One day, little Johnny complained to his mother: "I can't do anything without your help" and she replied: "Right! What would you do without me."

Distortion

So Johnny puts on his magical glasses becoming doubly blind, to himself and his environment, as he trades his autonomy and self-esteem for a dependent life plan. Viewing the world through "scripty" glasses, on the basis of a childhood decision he distorts everything from that point on. The physically disabled child, as well as the adventitiously disabled adult, responds as best he can to intense cultural and often familial pressures to be handicapped, that is, to be socially helpless to one degree or another. This marks the distinction between a disability, or loss of some function, and a handicap, a giving up of autonomy and authenticity.

Goal and techniques

The goal in script analysis is not merely to "make progress" in becoming happier frogs, but rather to reclaim autonomous prince- or princess-hood. Many techniques promote awareness of script and work towards the Adult decision to be responsible for our own lives and to stop blaming parents, who did the best they could within the limitations of their own scripts. For example, a transactional diagram called the Script Matrix (Steiner, 1971) helps people become aware of messages from their families in the form of Parent "do's" (be married, be educated); Crazy Child "don'ts" or injunctions (don't exist, don't think, don't feel, don't touch, don't be you); and Adult "here's how" modeling of how to carry out the do's and don't's. A Script Checklist (Steiner, 1967) and a Life Script Questionnaire (Holloway, 1973), including a version of the latter in braille, provide a framework for discovering the key elements of a script. Recounting favorite heroes, especially fairy tale characters, is a fruitful way to get at models for script decisions. Fantasy exercises, such as role playing, becoming members of the family of one of the group around the dinner table, or imagining the worst and the best thing that can happen if John gives up mother's influence, provides valuable script information. Present, observable transactions with the counselor, such as the use of language discounts ("I can't" versus "I won't"), a burst of tears, or a soulful sigh, show how the script is being followed today.

Permission, protection, potency

If John starts TA counseling, these techniques and others which lead to awareness and understanding of the functioning of ego states, transactions, games, and scripts will be actively explored with an eye toward change. As he works towards taking charge of his life, John will experience the three "P's" of TA counseling: Permission for John's Child to break free of his script injunction ("It's OK to be autonomous instead of helpless"); Protection from the sabotaging Critical Parent in John's head and others who may oppose changes; and Potency, the counselor's willingness, commitment, and skills to help John become the person he was born to be.

TA in Rehabilitation

☐ Nationally, TA is now beginning to be applied in the fields of disability and rehabilitation although the literature is sparse (Roberts, 1973; Thomson, 1974). The first workshop on "The Utilization of TA Techniques in Vocational Rehabilitation" was held in June, 1974. In the same year, Thomson addressed the National Federation for the Blind (Student Divison) and presented papers at TA conventions in Seattle and San Francisco describing findings and experiences in innovative uses of TA at the Lighthouse for the Blind in Seattle. Mosher has used TA in Vocational Exploration Groups for the blind, the deaf, and other severely disabled, sponsored by the Washington State Employment Security Department and demonstrated the effectiveness of TA in job placement workshops for rehabilitation workers.

TA growth in these fields, as in so many others, will be rapid because it offers participants a potent and fun way to develop the insight to take off those magical glasses, to perceive the world in an autonomous way, and to make redecisions for fuller lives as winners rather than losers.

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Next Month in the New Outlook

The March 1975 issue of the *New Outlook for the Blind* will include articles on a rehabilitation aide project, a life skills center for blind adolescents, the Research Centre for the Education of the Visually Handicapped at England's University of Birmingham, the blind child with a progressive terminal illness, and teaching orientation and mobility to a totally blind, bilateral hand amputee. In addition, there will be reviews of *Your Eyes: A Book for Paramedical Personnel and the Lay Reader*, by Thomas Chalkley, M.D., and *GIVE! Who Gets Your Charity Dollar?* by Harvey Katz.

Some Implications for Supervision of the Paraprofessional in Home Services for the Visually Handicapped

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ABSTRACT: To provide a complete network of high quality services to the visually handicapped person it is necessary to have interagency cooperation and coordination of efforts, including interagency supervision of personnel. This cooperation should include participation in training programs, supervision of the paraprofessional in individual case situations, and regularly held interagency administrative staff meetings to evaluate services. It is important that all concerned share the same goals for the welfare of the client.

I would like to approach the supervision of paraprofessionals from the vantage point of a multi-service agency for the blind. The Cincinnati Association for the Blind (CAB) was established many years ago to provide social and rehabilitiation services to blind and visually handicapped persons. The goal of the agency program is to enable the individual to function as independently as possible, to the highest level of his ability. In fulfilling this goal, the special services of CAB are enhanced and complemented by all community services, thereby providing a network of services for blind and visually handicapped persons. Among our local community services, the Home Aid Service is a valuable and needed resource for visually handicapped persons.

Coordination of Services

☐ Home Aid Service is extremely helpful in situations where the visually handicapped person is undergoing short-term convalescence from eye surgery or experiencing an acute episode of grief following visual loss, an acute episode of a chronic illness, or a terminal illness. In either instance, good service is based upon interagency coordination and supervision of all concerned personnel. Well defined goals, established as early as possible, should be shared by everyone. This coordination of agency services is the keystone of supervision in the home setting and the process whereby supervisory techniques are developed and refined. In our experience, there are three major aspects of interagency functioning: participation in training programs, assistance to and supervision of the paraprofessional in individual case situations, and interagency administrative staff meetings on a regular basis to evaluate effectiveness and determine future areas of attention. These factors, while separate, are equally important and basic to good service—the goal of all agencies in the health and welfare field.

Training Programs

☐ Agencies serving the blind and visually handicapped are keenly aware of the need for educating the sighted world to the needs and capacities of the visually handicapped. Home aides and other paraprofessionals are part of this sighted world. Thus the CAB participates in a session of the Home Aid Service's training program. Here, the film "When You Meet a Blind Person"

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is shown and discussed. Use of the sighted guide and special techniques for eating, personal care, and providing verbal descriptions are demonstrated. Through this training session, the paraprofessional gains an understanding of what it means to function without sight. In addition, the training session serves to reduce the fear and anxiety the paraprofessional might experience in working with visually handicapped persons.

Individual Cases

Sharing knowledge

☐ Assistance to and supervision of the paraprofessional in individual case situations are fostered in five ways: the first, as discussed above, is the sharing of knowledge and goals concerning the person being served so that both the person and the agencies benefit. This sharing prepares the home aide not only for the type of visual disability she will encounter but also for the family situation. Conversely, telling family members what they can expect from the home aide results in smoother operations. (Our experience suggests families in crisis do not always hear our goals—emotional tensions often block understanding so that the explanation of goals may need to be repeated.) The second way to aid the paraprofessional is to outline the rehabilitation goals so as to stress how motivation for independent functioning may be stimulated. Progress toward these goals must take into account the individual's own pace. Timing is an important factor, but it is a dynamic, changing one rather than a matter of adherence to a set schedule.

Outlining goals

Communication

A third way of assisting the paraprofessional, closely related to the concept of sharing knowledge about the person being served, but important enough to be mentioned in its own right, is the setting up of a fairly regular system of contact among the home aide, the agency worker, and the family. Intercommunication provides the means whereby progress or lack of progress is observed and ongoing service is planned. Contact can be made by telephone or in person; the key factor is that of regularity. An important area of communication concerns the ongoing review of services. In these reviews, areas needing attention, clarification, and interpretation of role or changes in patterns of service are discussed. As the visually handicapped person regains skills, Home Aid Service is gradually reduced and eventually terminated. (Conversely, if problems arise, Home Aid Service may need to be increased.) Lastly, when services are completed, an honest review and appraisal is helpful to all concerned. To evaluate the effectiveness of coordinated service, it is necessary to ask whether the family has become aware of community services, whether the paraprofessional has increased her skill in working with people, and whether the agency has increased total services to the family by good use of community services. If the system of coordinated services has broken down, the reasons must be determined. In this way it is possible to outline areas of service needing further attention.

Review

Evaluation

Illustrations

Short-term care

☐ The above points are best illustrated by the cases of Joyce and Marjorie, in which Home Aid Service and the CAB cooperated and coordinated services. Supervision of paraprofessional personnel in the home on a brief or short-term basis is demonstrated in the services provided to Joyce, a 51-year-old, unmarried, multiply handicapped employee of a sheltered workshop. Because of cataracts and congenital myopia, Joyce is considered legally blind but does have some functional vision; she is also mildly retarded. Her major disability is her aggressive, demanding, and critical attitude resulting from severe life stresses (loss of parent, alienation of siblings, limited education) not related to visual impairment. Joyce sees her problems as due to being "short-changed by life."

Planning together

When her ophthalmologist recommended cataract surgery, the CAB social worker assisted Joyce in making hospital and nursing home plans. Joyce's original wish was for someone to stay with her on a 24-hour basis but because this service was neither available nor feasible, a plan for daytime Home Aid Service was carefully discussed. The duties of the home aide were developed with Joyce, and referral to Home Aid Service was made with her full knowledge and consent. After surgery and while Joyce was still in the nursing home, the social worker met with the prospective home aide, Mrs. George, and taught her the sighted guide technique. Mrs. George's duties included assistance in personal care, laundry, bedmaking, cooking, cleaning, and escort service to medical appointments and marketing. Joyce's negative attitudes were explained to prepare her for criticism and demands, and she was urged to forestall demands for overtime by preparing things in advance. Mrs. George was asked to encourage but not pressure Joyce into doing things for herself on a gradual basis.

Positive experience

After six weeks, on the recommendation of Joyce's ophthalmologist and in conference with both Joyce and Mrs. George, service was reduced first to three days and then to two days a week. At the end of 11 weeks, Joyce was able to manage on her own and return to employment. As expected, she was frightened at the prospect of receiving no services but when demands for additional help were not encouraged by her ophthalmologist, Joyce criticized the quality of care given her by the aide. Then she relented and said, "I guess I liked Georgie and miss her." The total service was a positive experience for Joyce. She returned to work with improved vision and said, "Everyone was so good to me and really helped me." For the first time in the eight years our agency has known Joyce, she wrote "Thank You" notes to the agencies. She maintains a sincere and friendly interest in Mrs. George. As our agencies reviewed this instance of joint service, we felt the supervision of Mrs. George and the act of planning jointly for Joyce's needs, as defined by her ophthalmologist, were the basis of this success. Short-term service requires careful planning and clearly established goals.

Long-term care

The supervision of the paraprofessional is even more demanding in long-term care, where rehabilitation proceeds only when the individual is ready to move ahead. In Marjorie's situation, coordinated services by the social worker, the rehabilitation teacher, and the home aide extended over a period of 26 months. This case also demonstrates changes in personnel, a factor over which no agency has control but which must be recognized and dealt with. Marjorie had two social workers, three home aides, and one rehabilitation teacher. As each new person entered the home, everyone involved had to be prepared for the change.

Personnel changes

Adjustment

Marjorie's husband Roy requested help from CAB for himself, his wife, and their 16-year-old son because his wife, who has arthritis and a heart condition, was very depressed following unsuccessful cataract surgery. He said Marjorie had been losing her sight for years but kept feeling that it would come back "when God wills it." Meanwhile, she stayed in bed, cried, was very nervous, and claimed to be unable to do anything. Roy was fearful of leaving Marjorie alone but worried about losing his job if he stayed home to care for her. In this situation, the supervision of the home aide stressed recognizing and dealing with Marjorie's reactions and the role of the paraprofessional in relation to the roles of the rehabilitation teacher and the social worker. The aide was encouraged to do household tasks and to accept Marjorie's claim of not being able to function while she was so depressed. She learned about the problems of adjustment to visual loss and was helped to understand that criticism would be part of Marjorie's anger at being blind and not really a criticism of her or her work.

Gradual participation

The aide encouraged Marjorie to sit in a chair, listen to Talking Books, and participate in planning menus and running the house. Gradually Marjorie began to participate and was ready to learn how to manage her own house. When the rehabilitation teacher began instruction and training in skills of daily living, the home aide encouraged Marjorie to do the newly learned tasks and praised her for her growing independence. The rehabilitation teacher planned instruction on the basis of constantly increasing skill and confidence and the aide reinforced this.

Observations

Each week the aide reported her observations to the social worker. Marjorie's situation was complicated by severe economic problems, acting out episodes by her son, and her own health problems. Often it was the home aide who was first to observe and detect change. She urged Majorie to call the social worker or would call herself when necessary. The social worker in turn helped the aide to understand something of the complicated interaction in the family and stressed the sustaining role that the aide was able to play because of her daily contact with the client. As Marjorie gained independence and assumed responsiblity for her own home again, home aid services were gradually reduced. An interesting development occurred when Marjorie criticized and complained about the aide who had been with her for a year: suddenly she felt that the aide was not dusting correctly, cooking food they did not like, and "sitting down" on the job. As these complaints were reviewed, the caseworker and the aide decided Marjorie really was ready to manage on her own. Services of the aide were terminated and Marjorie returned to full management of her home. Her understanding of the complicated interagency relationships is reflected in a letter she sent the agency:

Independence

> I am writing to tell you how much I appreciate your services . . . My teacher has taught me how to do just about everything from knitting to sewing, some domestic home care. She has been very patient with me. She also gave me more confidence in myself and has made my handicap a bit easier to handle . . .
>
> My social worker has a considerate attitude, visits me, and seems proud of my work. She is easy to understand and get along with.

(Continued on page 87.)

Houseparents' Expectations: A Crucial Variable in the Performance of Blind Institutionalized Children

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ABSTRACT: The study to test the degree of relationship between the blind child's performance and expectations of houseparents, the most significant others in the institutionalized child's life, supported the hypothesis that houseparents' influence on behavior was statistically significant. The author contends that it is of utmost importance, therefore, that houseparents and other significant personnel be selected carefully and receive continued training. They must become familiar, through role-taking, with the world of the blind, and blind and sighted together must determine behavioral expectancies for the blind child.

> *But in human kindness there is a paradox; that which it seeks to help it can also destroy.*
>
> —Chevigny, 1946

The objective of this paper is to present findings from a study of residential blind children and discuss the implications for the selection and training of houseparents.

Contention of the Study

☐ A review of the literature tends to support the view that expectations and performance are highly interdependent variables and that the expectations of "significant others" tend to shape actual performance (Biddle and Thomas, 1967). Although this hypothesis has been empirically supported in interactional behaviors of the sighted, there is evidence to the contrary in interactional patterns of the sighted with the blind (Chevigny, 1946; Bauman & Yoder, 1966; Thomas, 1966; Bateman, 1964; Lorber, 1967). It is the contention of this study that the stated "role asynchrony" (Thomas, 1966) or "expectation discrepancy" (Wright, 1960) between performance of the blind and the expectations of their sighted peers is due to the lack of familiarity with one another's culture (Scott, 1969; Lorber, 1967; Lemert, 1966). Loss of the crucial faculty of sight changes role performance considerably. Where others use visual cues to manage their environment, the blind must rely on tactile, auditory, and olfactory cues. This in itself constructs a barrier to communication. It is easier to identify and assume the role of another if familiarity exists between the cultures.

Role-taking

One way of enhancing familiarity and minimizing expectation discrepancy is to apply the concept of "role-taking" to interactional situations: to the extent that "X" can place himself in "Y's" shoes and assume "Y's" role, the probability of veridicality in his role expectations for "Y" will increase propor-

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This article is developed in part from the findings of the writer's doctoral dissertation, titled " Selective factors associated with role behaviors of the blind," unpublished, Washington University, St. Louis, 1970.

tionately (Turner, 1962). But if certain cultural norms are alien to the conceptual system of the would-be role-taker, identification becomes extremely difficult. This is particularly applicable to blind and sighted interactions where no predetermined rules of behavior exist, hence there is considerable awkwardness and incongruency between performance and expectations (Goffman, 1963; Scott, 1969; Wright, 1960). However, if this distance in cultures is abridged, it would logically appear to have a corresponding reduction in the "expectation discrepancy" (Wright, 1960) and lead toward greater role synchrony in blind-sighted interactions.

Conjoint goals

In order to minimize this "expectation discrepancy" training goals for those involved in work with the blind must take into consideration the task of increasing role-taking ability by creating an intimate and empathic understanding of the blind role—through sensitivity training, psychodrama, and other situations in which they assume the role of the blind person and experience the environment from his perspective. Currently, the rules for blind and sighted interactions are left to the idiosyncratic whims of the sighted, who, ironically, set the pace according to their own conceptual biases. The blind perforce must learn to adhere to the socially desirable behaviors of the sighted in order to be accepted in the sighted society. This paper contends that interactional behavioral expectancies in blind and sighted encounters must be determined by the conjoint effort of the blind and sighted after the sighted have realistically and empathically assessed the world from the blind persons' point of view. In order to test this contention the author investigated the nature of the association between selected factors (expectations of significant others) and the role behaviors of blind children, operationally defined as instrumental and social task performance.

Hypothesis and Method

☐ On the assumption that greater familiarity with blind persons would bring greater congruence between blind-sighted encounters, a study was designed to test the degree of relationship between blind children's performance in an institutional setting and the expectations of their houseparents, the most significant others in the current life of the blind child. The conceptual hypothesis stated a positive relationship between expectation categories and the blind child's performance. In order to investigate empirically the major hypothesis, the following sub-hypotheses were designed: 1) Houseparents' expectations are positively related to the blind child's performance. 2) Blind children's perception of houseparents' expectations are positively related to their role performance. 3) Blind children's expectations of themselves and perception of houseparents' expectations are positively related. 4) Blind children's performance is positively related to parental expectations. 5) There is no relationship between the performance of blind children and the expectations of random strangers.

Sub-hypotheses

The study

To test these hypotheses a sample of 26 blind adolescent subjects and their houseparents were selected from a midwestern school for the blind. Variable control took into consideration factors of social class, age, range of visual acuity, time lapse since onset of blindness, and lack of physical coordination. The subjects and their houseparents were administered questionnaires matched in content and rated on a six-point interval scale to score the variables in the expectation categories. (The expectation questionnaire, on which data were collected from houseparents, was also administered to a group of 30 subjects who had no direct contact with blindness and to the parents of the blind subjects to get "random stranger" and parental expectation scores.) Performance behaviors were also scored on a six-point interval scale from a daily count of actual behaviors to procure matched sets of observations.

Social and instrumental tasks

The instrument to collect data was constructed of 34 social and instrumental behaviors. (The social included activities which necessitate interaction and the instrumental, activities which do not necessitate interaction.) This was further refined by a factor analysis to isolate underlying commonalities in the inferred social and instrumental behaviors. The findings revealed two patterns of significant factor loadings ($= < .30$), reducing social tasks to 11 and instrumental tasks to nine:

Social Tasks

1. Wear matching clothes
2. Give semblance of eye contact
3. Manage allowance
4. Hold hands with friend of opposite sex
5. Maintain proper table manners
6. Take part in activities other than school
7. Clean room
8. Make bed
9. Shower or bathe
10. Dial phone
11. Be compliant

Instrumental Tasks

1. Be a tidy eater
2. Brush teeth
3. Wash hands
4. Make complete change of clothes
5. Be neat in appearance
6. Get out of bed when first called in the morning
7. Put clothes away at night
8. Put dirty clothes in laundry
9. Attend studies

The 14 behaviors which did not share these commonalities with the two categories, social and instrumental tasks, were eliminated from the instrument. The relationship between expectation categories and performance was measured by the application of a multiple regression analysis. The correlation computed for each social and instrument behavior determined the maximized extent of relationship or role synchrony between the criterion variable, performance, and the expectation variables selected are listed below:

Criterion
Variable: V_1 Perf. (Performance)

Predictors
Variables: V_2 PEXP (Parent Expectations)
V_6 SELFEX (Self Expectations)
V_9 HPEXP (Houseparent Expectations)
V_{10} CPHPE (Child's Perception of Houseparent Expectations)
V_{11} RAND (Random Stranger Expectations)

Findings and Implications

☐ The results support the study hypotheses with a probability ranging from $< .05$ to $< .001$ that the relationship between expectations categories and performance of the blind child is not a chance phenomenon. This has important implications for work with the blind. It suggests not only training of the blind child *per se,* but also training and involvement of significant others in planning, implementing, and inducing changes in rehabilitation schemes. Generally effort is concentrated in direct training of the blind, while little attention is paid to the environmental variables which, according to the findings of the present study, have the predictive potency to facilitate or retard performance. Few training programs exist for the adults in the blind child's life. This is an area which could be developed so that simultaneous efforts are directed toward the blind individual and his environment.

Houseparents' influence

In the analysis of the findings, the houseparents stood out as the single most significant influence in the life of the institutionalized student. Their influence on certain social and instrumental tasks was statistically significant and explained a relatively high proportion of the variance in the performance of the blind child on these particular tasks. For example, on the social behaviors the blind child performed according to his perception of how the houseparents expected him to act, with high congruence between the two variables, the actual expectation of the houseparents and the perceived expectations of the blind child. A similar set of findings were derived from the statistical analysis of instrumental behaviors. Here, four behaviors (put away clothes at night, place dirty clothes in the laundry, brush teeth, and attend studies) were performed entirely according to the expectation of the houseparents at an extremely high statistical probability ($< .001$). However, as will be explained, the rest of the behaviors in this category were performed according to parental expectations. An interesting finding was that the blind child's expectations for himself seldom accounted for a relatively large proportion of the variance in his performance. This supports the author's contention that the blind, to be accepted in society, must acquiesce to sighted expectations, molding their self-images to take on role behaviors which may or may not be in keeping with their own abilities to function at optimal level. The results did not show any statistically significant relationship between random strangers' expectations and role behaviors of the blind.

Expectations of the sighted

Instrumental tasks

When the findings are more specifically analyzed according to social and instrumental task performances, a curious pattern emerges. Although houseparents' influence (either directly or through the blind child's perception) explains a relatively high proportion of the variance in the social behaviors of the blind child, in the case of instrumental tasks the study found this to be true in only the four out of nine behaviors mentioned above. This influence differential in social and instrumental tasks provides the researcher with heuristic trends allowing grounds for speculation. Instrumental tasks are generally internalized in the early socialization period of the child, and as such their performance appears to bear little significance to the residential location of the person. These behaviors are likely to be discharged according to the norms already acquired and introjected by the individual. In the case of the study subjects, the most influential variable in this performance area was parental expectations. This is easily understandable as parents are the primary "signifi-

Parental expectations

cant others" in the life of a child regardless of his physical limitations or assets. Children learn to incorporate the role of the "significant other" and only later, that of the "generalized other" in the process of developing their self-concepts (Mead, 1934). Hence primary level tasks are more likely to be performed under the learning schema acquired during the earlier period of socialization. The four tasks that do bear a highly significant relationship between performance and houseparents' expectations are associated with institutional living in an academic setting. Thus houseparents' expectations would be the logical influence to shape the student's behavior in these particular areas. Although it is possible that these behaviors may have become an integral part of the repertoire of the blind child's categories of performance expectancies prior to entering residential school, since the houseparents are at this time the single most significant adults in the life of the child, these expectancies are projected on to them.

Social tasks

However, when the focus is moved to the area of social tasks, it is found that nine out of the 11 tasks are significantly influenced by the variables related to houseparents' expectations. This is a highly crucial finding in the light of studying the influences that shape the life style of the blind child. Social behaviors, as the definition indicates, necessitate interaction with peers and significant others and as such are an important determinant of the image the individual develops of himself (Mead, 1934; Ivey, 1971). In an institutional setting the houseparents interact most intensively with the blind child, and so the delicate task of molding the self-image of the blind child is to a considerable extent under their control. This phenomenon is reinforced by the findings of the present study.

Clear communication

Statistical findings support the stated hypotheses and open up areas for speculation regarding the apparently clear channel of communication between houseparents and child and the implication this has in the development of the role-image of the blind child. It is assumed that the more congruence there is between the expectation of significant others and the self-expectations of the blind child, the less tendency there will be for distortion of reality or exaggerated fears of the limitations of blindness. The communication facility should be systematically investigated so that the blind child can be encouraged to perform at the realistic level of his potential. The responsibility for a realistic assessment of the blind child's potential again falls on those who most closely interact with him: in the case of the institutionalized child, the houseparents. Hence the selection, training, and testing of the aptitude of persons for this service to the blind is of crucial importance.

Conclusions and Implications

Female houseparents

☐ The frequency with which houseparents' influence bears a relationship to performance is an important finding. It highlights the institutional factors which evidently predominate the blind child's behavior in a residential setting. In the research setting of the present study a singular factor is that houseparents in both male and female dormitories are women. This might indicate that resident students operate within a matriarchal structure, whereas nonresident students generally come from two-parent families. Assuming more female identification among resident students, could this account for their apparent lack of self-assertion in the performance of social behaviors? (Nonresidential students performed social tasks according to their self-expectations [Mayadas, 1970].) However, it could be argued that the organizational variables are responsible for the apparent lack of assertiveness in the resident student and that female houseparents are not at issue. If the organizational setup contributes to unassertive behavior, then institutional variables, such as the control exercised by houseparents, are certainly highly significant factors in the blind child's development. The sizable influence exerted by houseparents would have special significance for practice in determining which category of "significant other" expectations should be manipulated to obtain corresponding change in the blind child's behaviors.

Institutional variables

Other staff

Another institutional factor which cannot be overlooked is the close proximity the resident student enjoys with resident staff and counselors. Despite the influence organizational variables wield as determinants of behavior, it appears that not too much emphasis is given to selection of personnel. This may be due either to practical difficulties (e.g., lack of funds) or a lack of awareness of the importance of these persons in the life of the blind child.

Resident vs. nonresident

Students who live at home possibly can regulate their behavior in accordance with their own preferences, whereas the resident student may be forced to conform to environmental demands more rigidly than his peers. This raises the issue of resident versus nonresident status for blind students. If the goal is to integrate the blind person into a sighted environment, should he then be segregated by a residential setting where he interacts mainly with other blind persons? A nonresident student has constant exposure to sighted siblings and peers in his neighborhood. Is the socialization process of the resident blind student stilted and is it preparing him inadequately for a competitive society? Studies of blind students after they leave residential settings are needed.

Special schools

The question of special schools for the blind is also an issue. Do blind children studying in integrated settings perform differently from the study sample? There must be further exploration and research in this area. The resident student appears much more prone to regimentation through control of organizational variables than his nonresident peer. Is a residential setting conducive to the optimal development of the blind child as a total person? This line of argument may be value laden. For example, is freedom of action a desired value in preference to regimentation? Questions such as these require study which goes beyond the data given here. However, for immediate practice it does suggest that resident students' behaviors are far more manageable through houseparent expectations and can be manipulated by effecting changes in just one category of "significant others."

Houseparent selection

What factors, then, should be given primary consideration in the selection of houseparents? Carkhuff (1969) lists seven measureable variables essential for effective human communication: empathic understanding, respect, genuineness, self-disclosure, immediacy, specificity, and confrontation. Perhaps applicants can be tested on these dimensions.

Houseparent training

The culture of blindness differs from that of the sighted world and familiarity with this culture must be inculcated in those who shape the future behaviors of the blind child and prepare him for living in a sighted world. Education of the houseparents can take two forms: didactic and experiential. Certainly knowledge about blindness and work with the blind is a prerequisite, but they must also be aware of their own attitudes towards people in general and the blind in particular. Present training technology relies heavily on groups and audio-visual devices to create self-awareness. An excellent facilitator of experiential learning has been the videotape (Mayadas & O'Brien, 1973), which provides the least distorted feedback of behaviors. The instant replay capability provides the trainee with the opportunity for self-criticism. Videotapes also permit the user to view his interactional patterns objectively and provide him with the opportunity to be an object to himself (Mead, 1934). House-parents can look at how they actually interact with the blind child and, if necessary, alter their behavior. Videotapes also permit replay in slow motion, so that behaviors which otherwise may have been overlooked can be studied and reinforced or altered. They can also provide the houseparents with a recorded image of the behaviors of the blind child. Through the continuous replay capability of the videotape, behaviors such as "blindisms" can be isolated, identified, and systematically changed (Stoller, 1968). Thus, if a houseparent views his interaction with the blind child on videotape, he can determine the constructive or destructive consequences of his own behaviors on the performance of the child and compare the child's behavioral patterns with the selected sighted mannerisms he is expected to acquire.

Videotape

Social image

Since the blind child has no way of knowing the image he projects, it is the obligation of the sighted adult to help him develop an acceptable social image. It is this image which will gradually be internalized and act as a basis for overt performance. A person's interactions with his social environment are colored by his self-concept (Roger, 1970). The blind child who develops a high self-concept is bound to face the world with much more assurance than the child whose self-image is low. The training of the institutionalized blind child is highly dependent on the selection and training of houseparents and other residential personnel who shape his behaviors. The implications of this study suggest an emphasis on the selection and continued training of the houseparents, along with education of the blind child, in an interactional context, where the impact of each on the other can be evaluated, studied, and used as a basis for further improvement in training techniques and methods.

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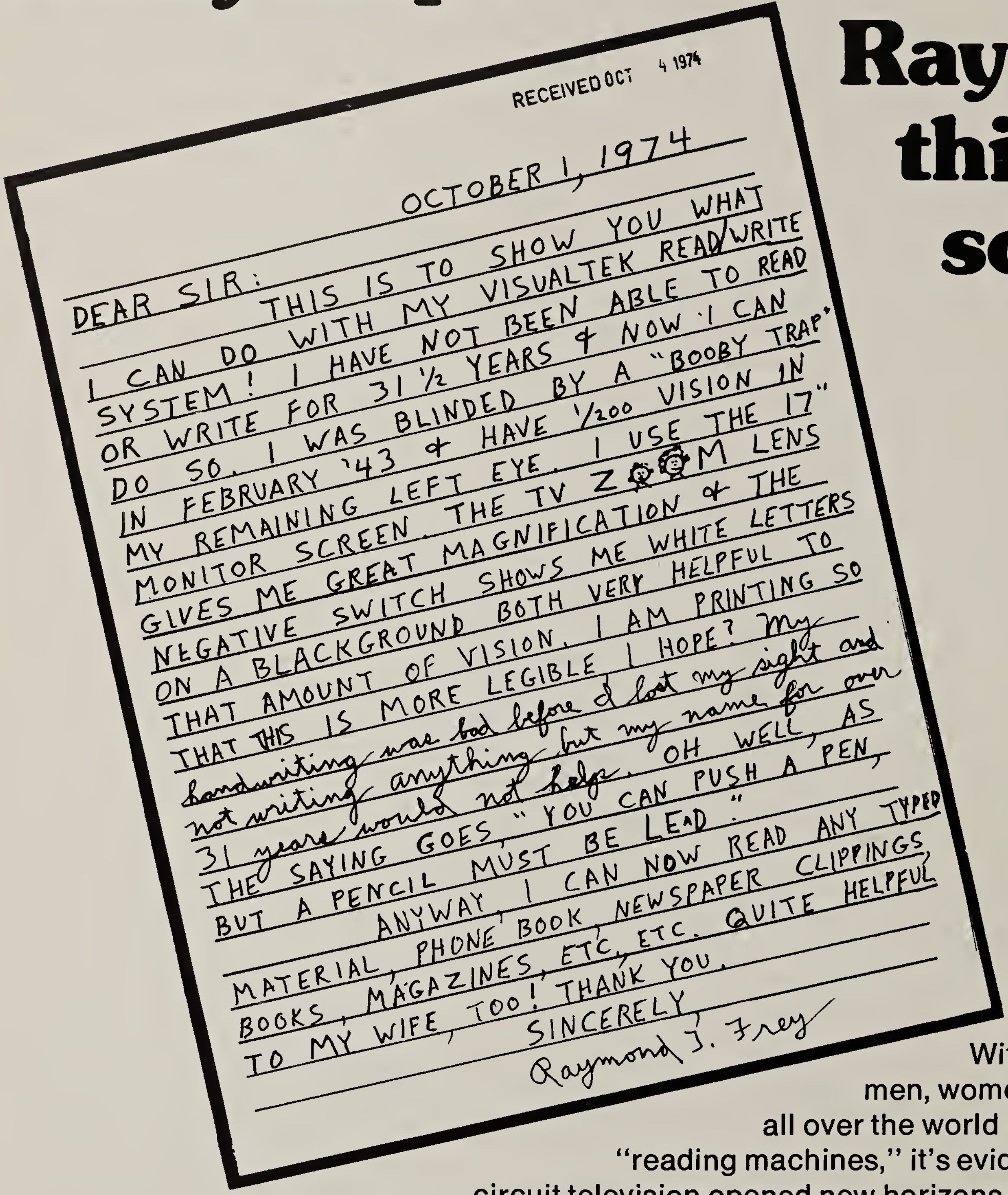

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Establishing Realistic Case Loads—*Continued from page 63.*

Case weight

that the teacher with 10 students will have less travel and preparation time than the teacher with 20 students.) At any rate, assigning a case weight of one, two, three, etc. to each student according to the number of subjects being taught provides a much more accurate assessment of the work load than a simple head count.

Formula

To determine an effective case load size, it is necessary to establish the number of instructional hours available to the teacher within a two-week teaching cycle. This can be done by using the following formula: the number of instructional hours (I) equals hours in the teaching cycle (C), minus travel time (T), minus preparation time (P). I = C-T-P. We can illustrate this formula by substituting numbers for letters. Consider the two-week work cycle as consisting of 80 hours; preparation time, 20 hours; and travel time, 20 hours. Thus we find that 40 = 80-20-20. In this simplified illustration the teacher would have an average of 40 instructional hours available every two weeks.

Application

The size of the teacher's case load will be determined by the number of instructional hours available. The actual number of students will be determined by case weight. Case weight is determined by the number of instructional hours required for each student during the teaching cycle. With 40 in-

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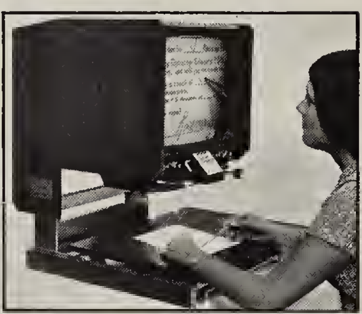

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structional hours available a teacher could serve any number of students from one to 40 as long as the total caseload was not more than 40 instructional hours.

Benefits

It is apparent from the above information that no teaching case load can be maintained at a constant number month after month. A formula such as that described can be used to keep case loads at a realistic level in terms of teaching effectiveness. Teachers and their clients benefit from the improved schedules and agency administration are able to provide the necessary data to legislators and others who must be informed of budgetary needs.

Some Implications for Supervision of the Paraprofessional—*Continued from page 76.*

Now I am thanking you for sending Mrs. Jones (home aide). She was really such a good cook and very sweet person. I often found myself waiting for her to do things that I could do because she has done everything so well. I miss her extremely but I know I had to learn to do things on my own or I might have lost confidence in myself.

Interagency Meetings

☐ In our experience, regularly held interagency administrative staff meetings are extremely helpful in updating and evaluating effectiveness. Whenever a network of paraprofessional and professional services is made available, an objective and mutual respect for the validity and quality of services provided by each person cannot be overemphasized. All personnel must be aware and accept that in the dynamic course of human interaction, each helping person will have periods of dominance and submission to others but that this should in no way be considered competition; each person's role is equally important. When the honest and objective evaluation is applied to the client and his family, we learn much about services. Because the family sometimes sees us differently from the way we see ourselves, our communication with them is of utmost importance.

Summary

In these meetings, where our work over a given period of time is reviewed, an appraisal of the current status of coordinated services is possible. We can ask where we should direct our joint attention for improving services and how we can further increase the skills of the paraprofessional. In summary, best use can be made of the skills of professional and paraprofessional personnel through interagency cooperation and coordination in training programs, in individual case assignments, and in the objective evaluation of services. Through these methods all agencies can come closer to achieving better services for persons needing special help.

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Comment

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A Proposal for Rehabilitation Teacher Unity

Thomas Hanson

There are several associations of rehabilitation teachers throughout the country—the American Association of Workers for the Blind Interest Group XI, the Association of Rehabilitation Teachers, the Eastern Conference of Rehabilitation Teachers, the Mid-American Conference of Rehabilitation Teachers, and the Western Conference of Teachers of the Adult Blind (the last-named organization was disbanded in November 1973). When one considers these existing associations and their goals, activities, and membership, several facets of their function must be explained. Several often expressed concerns are: Do these associations meet the needs of rehabilitation teachers? Do these associations contribute, benefit, and promote the growth of rehabilitation teaching?

I believe that the fate of the Western Conference of Teachers of the Adult Blind (WCTAB) has relevance when considering these points. The WCTAB was established in the mid-1940's with a stated purpose of producing needed materials for the field and upgrading the profession. It flourished for about 20 years. About the middle of the 1960's, membership started to decrease. This led to inactivity and the eventual abandonment of the organization. The reasons for this decision were: lack of interest by the potential members within the region; the existence of other associations which could provide the same services; a geographic territory too large for efficient communication; the absence of concern by various states and certain segments within the region; and the absence of leadership, initiative, and involvement.

Obviously, too many associations are trying to meet the needs of the rehabilitation teacher. As an alternative to the gradual attrition of rehabilitation teacher groups, I believe that the geographic conferences should be phased out and all our efforts devoted to a nucleus organization, namely, Interest Group XI of the American Association of Workers for the Blind. This would stimulate membership and meet the local and regional needs of rehabilitation teachers. The overall outcome would be a strong, viable voice representing the profession.

The local and regional interest groups would still be needed. Their success would depend upon strong and capable leadership, dedicated members, recognition within the field of rehabilitation, and the support of the base association, the American Association of Workers for the Blind.

The fate of the WCTAB shows that a parent association offering a structure to meet the needs, regional concerns, and national policies of rehabilitation teaching is needed. The national organization offers potential as a core organization for a strong and unified group whose existence will continue. The American Association of Workers for the Blind has state affiliates, regional conferences, and a national convention. The membership can attend conferences and/or workshops, participate on committees, and provide unity and strength to our profession. This is true with the orientation and mobility instructors through AAWB Interest Group IX.

The proposed organizational structure of Interest Group XI would consist of state and regional representation. Each state within a region would have a representative on the regional board of directors. (The American Association of Workers for the Blind is divided into six geographic regions.) One of the members of the regional board of directors would be selected to represent the region on the national board of directors. Under this structure, state, regional, and national interaction would be enhanced. The flow of communication, both upward and downward, would be more efficient. In addition, each level—state, regional, and national—would develop a constitution and by-laws. This would insure unified activities, programs, and philosophies.

We can be certain that the intentions of the Eastern Conference of Rehabilitation Teachers and the Mid-American Conference of Rehabilitation Teachers are beneficial for the growth of the profession. However, due to the vast geographic regions, inability of members to atend conferences, the lack of participation on committees, and an uncertainty about association affiliation, these organizations may be headed for the fate of the WCTAB. The duplication, gaps, and even absence of communication among groups could be alleviated with the support of one national organization. We are, in fact, hindering the progress of our profession by our inaction on this matter.

Certain segments within the profession that have common interests could unite to act as a catalyst for change and to promote the profession while supporting the base association. To achieve this unity we must: 1) join and support the American Association of Workers for the Blind; 2) establish or become involved in our local AAWB interest groups; 3) recruit new members for the AAWB and Interest Group XI; and 4) plan and carry out local and regional programs benefitting the profession.

The unified support of a local-regional-national structure would enable more persons to consider the real issues of the profession. This would benefit rehabilitation teachers everywhere. Some of the basic issues that must be dealt with are: rehabilitation teacher identity; qualifications of rehabilitation teachers; public education about the profession; production of materials for manuals and teaching guides; and certification of rehabilitation teachers.

These and other issues must be dealt with

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through the proposed structure, Interest Group XI of the American Association of Workers for the Blind. This proposal offers local, regional, and national representation within a unified structure. This proposal would promote activities, leadership, and programs emanating from the individual states to the regions and then to the national level. I believe that current leaders of various organizations for rehabilitation teachers will be vital to the success of the proposed system. The intent of this proposal is to unify the profession of rehabilitation teaching into a vital and meaningful part of the field of blind rehabilitation.

Mr. Hanson is the activities of daily living specialist, Indiana Rehabilitation Services–Blind Division, Indianapolis.

Review

Through the Rain and the Rainbow, the Remarkable Life of Richard Kinney, by Lyle M. Crist. Nashville, Tenn.: Abingdon Press, 1974. 224 p. $5.95.

Reviewed by Patricia Scherf Smith

This is a difficult book for someone in the field of blindness to review. Because it is not aimed at us in the field, but at the general public, it has many of the faults of sentimentality and "gee, isn't it remarkable what a person like that can do?" that blind and deaf-blind persons and professionals in the field decry so often.

At the same time, the book is a moving testament to the capacity of human beings to overcome obstacles that for many would be insurmountable.

Richard Kinney is, of course, the executive director of the Hadley School for the Blind and is deaf and blind. He is also a poet and a person of warmth, enthusiasm, and energy. The author is a professor at Mount Union College, Alliance, Ohio, Dick Kinney's alma mater.

The book tells the tale of Kinney's battle to return to Mount Union as a student ten years after he lost his hearing.

It is the story of the Hadley School for the Blind, its role in Kinney's own life as student and later as teacher, and its role in the lives of thousands of blind persons around the world.

It is also a love story—that of Richard Kinney and Evelyn Warmbrodt.

In fact, the book is simply the story of a man and his family and friends who are faced with some very special problems and how they overcame them.

The book should be read by everyone working with blind and deaf-blind persons because of the factual information about the Hadley School and Richard Kinney's life. But it also is to be recommended to all laymen who are faced with blindness, deafness, or a combination of the two in their friends or family, because it will indeed prove that neither deafness nor blindness needs to be a barrier to a successful life, albeit one beset with more than the usual number of difficulties.

Mrs. Smith is executive editor of the New Outlook for the Blind.

Focus on Ability, produced by the American National Red Cross. Sound, color, 16mm, 22 minutes. Cleared for television. ARC Stock No. 321604. Purchase price: $74. Order through regular ARC supply channels. Loan prints are available through the General Supply Office.

Reviewed by Stephen Black

A comedienne on the old "Laugh-In" television show had a habit of registering boredom by placing her index finger in the center of her cheek, fanning out her fingers, and then turning her hand slowly while announcing in a high-pitched, giggly voice, "BORING!" When obliged to view anything designated as a "training film," I have an involuntary reflex action: my index finger makes a bee-line for the center of my cheek.

Too often, training films are made by people who regard motion pictures as mere tools for recording a demonstration. The people figure, "Let's take our recent 'How To' manual and maybe a proceedings from the previous meeting, get Carl's pilot group to act it out . . . Prest-o . . . we'll have a film that will knock 'em dead." Yes, bored stiff.

Focus on Ability, the new film from the American Red Cross, is not boring. But then it is not a classical "how to" training film. And that is a bonus for its intended audience of swimming instructors.

Admirably, the film does not attempt to teach teachers how to teach swimming. What it does do is to isolate aspects necessary for teaching a handicapped person who may not have had previous experience in a swimming pool. Launched on the premise that water removes physical and social barriers, the film deals with the techniques associated with introducing handicapped youths to a swimming pool. Since water renders the body weightless, strain on muscles and joints is relieved and respiratory function increased. Of equal importance when dealing with a handicapped individual in a strange environment is the social benefit derived from pool activities: in the water all are equal no matter what the disability.

Since the water is the medium for the message, the camera is adroitly used to create a point of view that allows the audience to become a part of the actual exercises. The film concentrates on the in-pool capabilities of three kinds of handicapped individuals: cerebral palsied and those with other orthopedic difficulties, mentally retarded, and those with sensory disabilities. After a quick recapping of the five American Red Cross safety rules, the viewer is immersed in the swimming activities themselves. Using a magazine format with the above swimming skills serving as the masthead (and thus assuring credibility), a superimposed title announces the first area for discussion.

In the case of the cerebral palsied youths, we learn that emphasis must be placed on head movement. One solution for gaining this control is the use of water wings. By achieving buoyancy the student can then concentrate on other techniques.

For the swimmer who is mentally retarded, a healthy attitude is essential from the start. This is achieved through a strong rapport between instructor and pupil. A series of coaches begin working with two students, each still learning the elementary steps. Eventually the students progress enough to participate in a finale of group activity. A harmless sponge fight underscores the basic human need to compete. It also illustrates the value of team activities, since in most cases the handicapped individual's focus is on his own disability. Thus, in the communal arena of the pool, a disability becomes an ability through group participation.

The third area, sensory disability, brings blind youths into the water. Because the problem in teaching a blind person to swim is primarily one of communication, instructors work with one student at a time. We learn that the coach must first determine the extent of his pupil's disability, i.e., is he totally blind, does he have light perception, how are his mobility techniques?

To establish communication with a visually impaired swimmer, a strong emphasis is placed on physical contact. We see how the instructor guides his swimmer's arms through various movements and, in turn, allows the

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swimmer to feel the instructor's arms as they move through the strokes. There is the unmistakable feeling throughout the film that the student with a sensory disability is capable of the most independence in the water. Through the use of auditory orientation, in this case a metronome clicking away at poolside, the blind swimmer is soon able to orient himself independently and confidently.

Perhaps the least severe of those impairments illustrated were hearing disabilities. The instructors seemed to capitalize on the swimmers' abilities to imitate what they saw, a dimension absent in other cases.

Focus on Ability is a strong film which delivers its message and cuts through extraneous fluff. The overworked "triumph over despair" theme frequently found in films about handicapped individuals is thoughtfully omitted. The viewer's time is utilized efficiently and rewardingly.

For the swimming instructor who only occasionally encounters a handicapped student, the magazine format of the film allows for a quick reference to specific dysfunctions. And while the rudiments of dealing with each handicap with respect to swimming are thoroughly illustrated, the film wisely leaves room for the instructor to apply his own personal skill when approaching these special teaching situations.

Mr. Black is an information specialist, Public Education Division, Information Department, American Foundation for the Blind, New York.

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Mary Maie Richardson, chief librarian.

Ophthalmology and Rehabilitation Symposium, by Arthur H. Keeney. *American Journal of Ophthalmology* (Ophthalmic Publishing Company, 160 East Grand Avenue, Chicago, Illinois 60611), Vol. 78, No. 4, October 1974, pp. 730-731. Two-page summary of the Symposium held in Houston, Texas, April 25-27, 1974, under the auspices of the National Council of State Agencies for the Blind. Proceedings are scheduled for future publication.

Talking Books and the Local Library, by Hylda Kamisar and Dorothy Pollet. *Library Journal* (R. R. Bowker Company, 300 North Zeeb Road, Ann Arbor, Michigan 48106), Vol. 99, No. 16, September 15, 1974, pp. 2123-2125. Description of the Library of Congress Division for the Blind and Physically Handicapped and its network of regional and subregional libraries, with the emphasis upon the latter.

There's More Than One Way to Read a Book, by Karen Ellis. *Retirement Living* (99 Garden Street, Marion, Ohio 43302), Vol. 14, No. 11, November 1974, p. 31. Brief story concerning commercial production of abridged novels in tape cassette form.

This Is the Way We Do It in Kansas, by Claudell S. Stocker. *The Rehabilitation Teacher* (The National Braille Press, Inc., 88 St. Stephen Street, Boston, Massachusetts 02115), Vol. 6, No. 10, October 1974, pp. 11-21. History and description of the college preparatory program—recently renamed "Career Assessment and Preparation"—at the Kansas Rehabilitation Center for the Blind in Topeka, Kansas.

The Psycholinguistic Characteristics of Visually Impaired Children: An ITPA Pattern Analyses, by Sally Horan Gibbs and James A. Rice. *Education of the Visually Handicapped* (Association for Education of the Visually Handicapped, 919 Walnut Street, 4th Floor, Philadelphia, Pennsylvania 19107), Vol. 6, No. 3, October 1974, pp. 80-88. Report on an evaluation using the Revised Edition (1968) of the Illinois Test of Psycholinguistic Abilities.

A Study of the Reliability and Validity of the Visual Efficiency Scale With First Grade Children, by Randall Harley and John Spollen. *Education of the Visually Handicapped* (see address above), Vol. 6, No. 3, October 1974, pp. 88-93. The authors tested 113 normally seeing children and checked results against earlier uses of the Visual Efficiency Scale with preschool normally seeing and school-age low vision children.

Competitive Reinforcement of Sequential Mobility Instruction, by Alvin Vopata. *Education of the Visually Handicapped* (see address above), Vol. 6, No. 3, October 1974, pp. 93-96. A mobility quiz contest was developed at the Iowa Braille and Sight Saving School in Vinton, Iowa, patterned after television quiz programs. The author gives examples of the types of questions used for the different levels of instruction.

An Evaluation of the Silva Braille Compass: 1—Static Tests, by Grahame James and John Armstrong. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London W1N 6AA, England), Vol. 58, No. 689, September 1974, pp. 225-229. The authors are members of the Blind Mobility Research Unit, Department of Psychology at the University of Nottingham in England.

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Woodwork for the Visually Handicapped by Peter Jones. *The New Beacon* (see address above), Vol. 58, No. 689, September 1974, pp. 229-231. Mr. Jones, who has been blind for more than 30 years, describes the methods and equipment which have enabled him to enjoy woodworking as a hobby.

Don't Shut Me In—Charles Cummings, by David Castleton. *St. Dunstans Review* (191 Old Marylebone Road, London NW1 5QN, England), No. 654, July 1974, pp. 10-14. Interview with Charles Cummings, a blinded English veteran of World War II who has successfully continued farming, specializing in livestock.

Learning Is Good—Teaching Is Better, by Jacqueline Wood. *Tennessee Public Welfare Record* (Department of Public Welfare, 410 State Office Building, Nashville, Tennessee 37219), Vol. 37, No. 4, October 1974, pp. 109-110. The story of Dan McCurley, an itinerant teacher of the blind in Memphis, Tennessee, who is himself totally blind.

A Great-Grandmother Swings With the Times, by Lucile Hebert. *Tennessee Public Welfare Record* (see address above), Vol. 37, No. 3, June 1974, pp. 64-66. An interview with Mrs. Mae Bennett of Memphis, Tennessee, who is 84 years old and has severely limited vision.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Agency Administration

A New Look at Confidentiality in Social Welfare Services. National Assembly for Social Policy and Development (345 East 46th Street, New York, NY 10017), 25 cents.

A Marketing Approach to Donor Financial Planning, by Adrian B. Cockerill, Jr. *Fund Raising Management* (224 Seventh Street, Garden City, NY 11530), Vol. 6, No. 5, November-December 1974, pp. 52-54.

Architecture

Barrier Free Design: A Selected Bibliography, by Peter Lassen. Michigan Chapter, Paralyzed Veterans of America (5646 McMillan, Dearborn, MI 48127), 103 p. $6.00. The author, national architectural coordinator for the PVA, has arranged this extensive annotated bibliography under 22 headings, including standards and specifications, human factors, planning, checklists, transportation, bathrooms, kitchens, etc.

Directories

Directory of Services for Visually Handicapped in Southern California. Southern California Chapter, American Association of Workers for the Blind (order from: Mr. Kent Wardell, AAWB Directory Co-Editor, c/o Department of Special Education, California State University, Los Angeles, CA 90032—specify print or braille), 55 p. 1975 edition. $1.00. Fully annotated listing of 71 agencies, schools, companies, organizations, etc.

Films

First Things First: Occupational Therapy and the Developing Child. American Occupational Therapy Association (6000 Executive Boulevard, Rockville, MD 20852), 15 min., 16mm, color. Rental $15.00; purchase $99.50. Shows occupational therapists at work in the home, school, and day-care center and the techniques they use to facilitate the development of the infant and young child and to help handicapped children develop body awareness.

News in Brief

- Lord Fraser of Lonsdale died December 19, 1974, in London; he was 77 years old. Best known to workers for the blind around the world as the chairman of St. Dunstan's, the British agency for the war-blind, a post he had held since 1921, Lord Fraser was also active in politics (serving in the House of Commons for 18 years). He was twice a governor of the British Broadcasting Corporation, 1937-39 and 1941-46. He was knighted in 1934 and made a life peer in 1958. Blinded in the battle of the Somme in World War One, he worked for the passage of the Blind Voters Act in 1934 and for a law providing free radio licenses for blind persons. He is survived by his wife and daughter.

- A pilot edition of *Feeling Sports,* a new braille and recorded magazine on sports, is available from the Braille Sports Foundation, 8800 Hiway 7, Minneapolis, MN 55426. The magazine, written exclusively for visually handicapped persons, is edited by John Ross and will cover all aspects of sports. A sample copy of the pilot February issue may be obtained from the Braille Sports Foundation. The subscription price will be eight dollars annual.

- A new Internal Revenue Service rule makes it unnecessary for "legally" blind persons claiming an extra exemption for blindness to submit a statement certifying their blindness each year. From now on, the physician's statement will have to be submitted only once. Contact local Internal Revenue Service offices for more details.

- A national conference on radio reading services for blind and physically handicapped persons will be held in Oklahoma City, March 10 to 13, 1975. The conference, which is being sponsored by the American Foundation for the Blind, is open to any individual or agency already operating such a service or interested in starting one. For more information and registration forms, write William F. Gallagher, director, Program Planning Department, American Foundation for the Blind, 15 West 16th Street, New York, N.Y. 10011.

- A braille edition of the Rival "Crock-Pot" Cookbook has been produced by the braille committee of Beth Shalom Sisterhood, 2100 West 49th Terrace, Prairie Village, Kansas 66208. For more information about this cookbook, which contains 150 recipes using the "Crock-Pot," write the Beth Shalom Sisterhood.

- U.S. District Court Judge Alexander Harvey 2nd ruled in October that the Government cannot remove aged, blind, and crippled persons from federal disability rolls without first giving them a hearing. The ruling was the result of a suit filed by the Baltimore Legal Aid Bureau on behalf of four persons dropped or notified that they would be dropped from the roles when the U.S. Department of Health, Education, and Welfare began paring recipients. The ruling could affect as many as 100,000 persons across the country according to the Legal Aid Bureau.

- The National Institutes of Health (NIH) has been given the responsibility to implement the Research on Aging Act of 1974. A National Institute on Aging will be established within the NIH which will be in charge of all age-related research now being conducted in various parts of NIH and for developing new programs authorized by the legislation.

- Kiwanis International has begun a nationwide program on behalf of children with specific learning disabilities. Called "The Younger Years" program, it is being supported with materials and local project ideas by the national office of Kiwanis International.

- The U.S. Geological Survey of the Department of the Interior has awarded a grant to develop a map of the Washington, D.C., metropolitan area to Dr. John C. Sherman of the department of geography at the University of Washington.

  The final maps will be a combined effort of the U.S. Geological Survey, the University of Washington, and the Defense Mapping Agency.

- Recording for the Blind, 215 East 58th Street, New York, N.Y. 10022, requests that borrowers make an effort to return as many tapes as possible—as quickly as possible. The large increases in the costs of tapes and in the net number of books produced makes the speedy return of tapes by borrowers especially important.

- The State University of New York College of Optometry has received a $223,000 federal grant to develop a program to improve eye care service in the state's rural areas. The three-year project will concentrate on updating the skills of rural optometrists in disease detection, contact lenses, treatment of the aging, and increasing visual efficiency.

- The South Street Seaport Museum Book & Chart Store (25 Fulton Street, New York City, N.Y. 10038) is distributing a cassette lecture on "Safe Boating for the Young Skipper." The price is $10.65.

Appointments

- The Lighthouse, the New York Association for the Blind: **Winslow M. Lovejoy, Jr.,** president; **Roger C. Whitmarsh,** director of personnel administration.

- The Hadley School for the Blind: **Dr. Michael Carbery,** vice president.

Coming Events

February 26-March 1 International Conference of the Association for Children With Learning Disabilities, New York City.
March 10-13 National Conference on Radio Reading Services for Blind and Physically Handicapped Persons, American Foundation for the Blind, Oklahoma City.
March 20-21 National Conference of Rural Health, Roanoke, VA.
April 16-17 American Geriatrics Society, 32nd Annual Meeting, Miami Beach.
April 20-26 Council for Exceptional Children, 53rd Annual International Convention, Los Angeles.
April 24-29 Association for Research in Vision and Ophthalmology, Annual Meeting, Sarasota, FL.
May 5-8 National Braille Association, 13th National Conference, Milwaukee.
June 15-19 American Medical Association, 124th Annual Meeting, Atlantic, NJ.
June 15-21 American Physical Therapy Association, Anaheim, CA.
June 21-22 International Federation on Ageing, Third Conference, Jerusalem.
June 22-27 Tenth International Congress on Gerontology, Jerusalem.
June 29-July 3 International Congress of Biomechanics, Jyvaskyla, Finland.
July 20-23 American Association of Workers for the Blind, Biennial Meeting, Atlanta.
September 24-28 American Academy for Cerebral Palsy, New Orleans.

Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display—$13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, 15 West 16th Street, New York, N.Y. 10011.

AIDS AND APPLIANCES

Aud-a-Reader. Battery-AC disc player for 8-1/3 and 16-2/3 rpm. $40.00. SFB Products, Bala-Cynwyd, Pa. 19004.

Instruments, Recreation Equip. Sound or print catalog. Science for the Blind Products, Bala-Cynwyd, Pa. 19004.

CATALOGS

Optacon Catalog—products and services—a complete listing of Optacon Systems, Accessories, Training Course, and Training Material prices. Products are also pictured and described in detail. Write Telesensory Systems, Inc., 1889 Page Mill Road, Palo Alto, California 94304.

Aud-a-log, new 90-min. soundsheet catalog (8-1/3 rpm) of instruments for blind and visually limited. Free. SFB Products, 221 Rock Hill Rd., Bala-Cynwyd, Pa. 19004.

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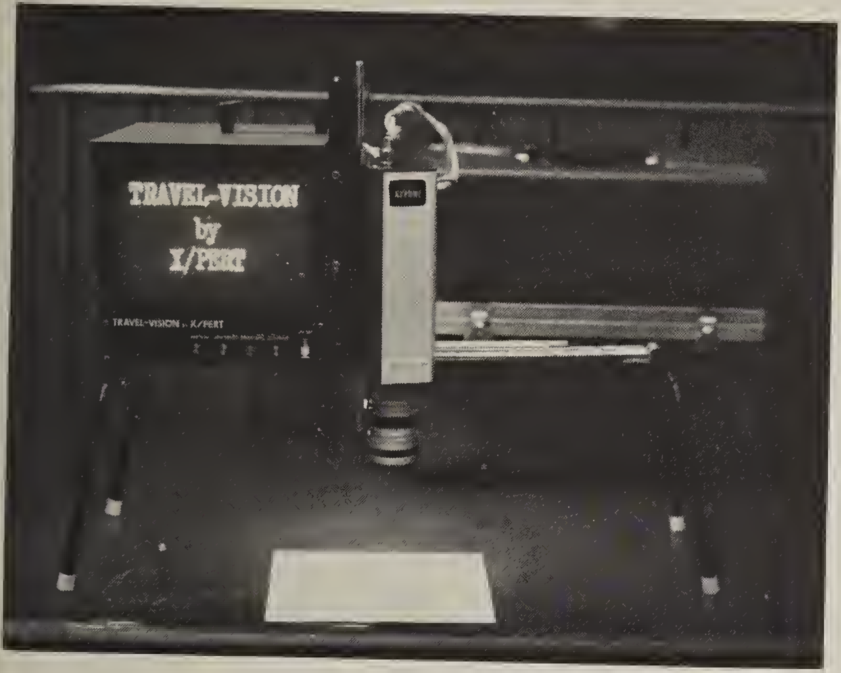

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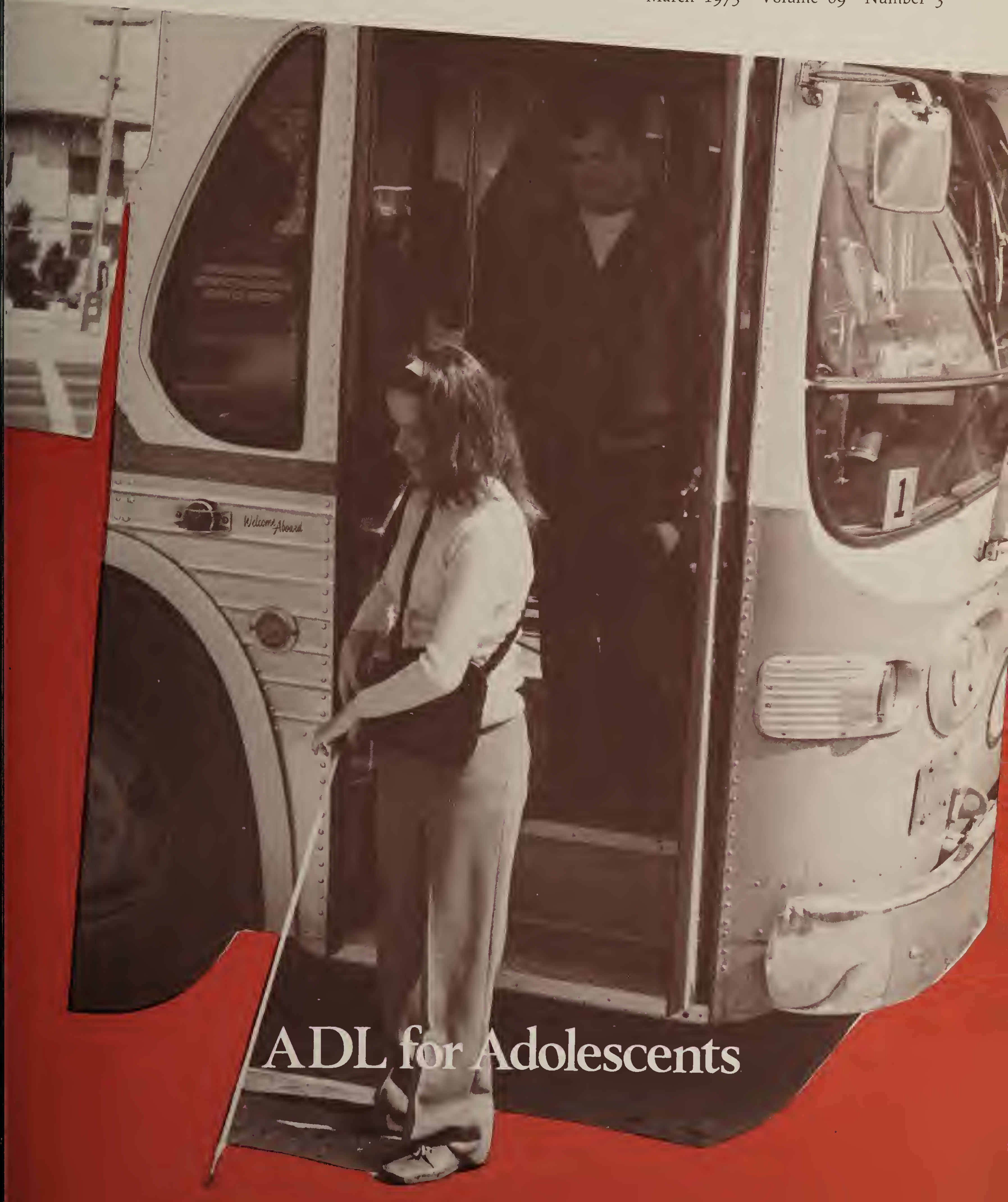
THE NEW Outlook FOR THE BLIND

March 1975 Volume 69 Number 3



ADL for Adolescents

THE NEW
Outlook
FOR THE BLIND

March 1975 Volume 69 Number 3

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The Research Centre for the Education of the Visually Handicapped, University of Birmingham, England

MICHAEL JOHN TOBIN

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ABSTRACT: An account is given of the genesis of the Research Centre and the broad aims laid down for it. Brief descriptions are provided of some of the major projects undertaken during the first five years, including: a longitudinal investigation of cognitive development and school achievement; a curriculum development project on visual perception training; investigations into the needs and behavior of visually handicapped children and adults suffering from additional handicaps; a study of the aims and methods of teaching English; and the development of a self-instructional system for learning braille. The paper concludes with accounts of the way in which classroom teachers are actively involved in the planning of the Centre's projects and of the development of communication channels between the schools and the Centre.

Education for the visually handicapped

Providing for the education of visually handicapped children in the United Kingdom is an integral part of the national education system, all blind and partially seeing children between the ages of five and 17 years being required to attend either their neighborhood primary and secondary schools or be enrolled in one of the "special" schools administered by the local education authorities or blind charitable organizations. There are approximately 3,700 visually handicapped children requiring and receiving special education in England and Wales, 1,200 of them being registered as blind, and 2,500 as partially sighted. Little research of a directed kind into their educational needs was carried out before the setting up of the Research Committee of the College of Teachers of the Blind in the early 1950's. Even then, there was no "centre" with full-time staff able to carry out a program of investigations over an extended period of time. Each of the projects initiated by the Research Committee had to be undertaken by the members themselves, most of whom were practicing teachers or, if researchers, employed in university education departments whose major and continuing research programs were not geared to the needs of the child suffering from visual impairment. Nevertheless, it was from this base of interest that the impetus came for the establishment of a permanent unit.

The Research Centre's Origins

☐ Such a unit was finally made possible through the generosity of the Royal National Institute for the Blind as part of a memorial to its late chairman, Sir Theodore Tylor. The Institute's financial backing, supplemented by contributions from the Department of Education and Science and from St. Dunstan's, enabled the University of Birmingham to establish the Research Centre in the Division of Educational Psychology in its School of Education on January 1, 1970. The Centre's Steering Committee felt from the beginning that it was necessary "to dispense with the hard and fast differentiation between the blind and partially sighted and for this reason the proposed Centre will include in its terms of reference 'the visually handicapped' and not merely 'the blind.' "

The Centre's aims

The broadly stated aims laid down by the Steering Committee included: 1) the carrying out of research into the particular means necessary to enable visually handicapped children and adults to learn and to understand to the maximum extent of their ability; 2) the assessment of the intelligence and aptitudes of individual visually handicapped children; 3) the investigation of the educational needs of those children suffering from handicaps additional to defective sight; and 4) the dissemination of information gathered from experiments in the U.K. and elsewhere. Some indication of the extent to which these broad aims and objectives have been achieved during the first five years of our existence is sketched out below.

Current Projects

☐ Current work centers around two major projects. The first is a longitudinal investigation of 117 blind and partially sighted children who were age five in the school year 1973–74. The intention is to follow this group of children through their school careers, i.e., for the next 10 or 11 years, in the hope that we shall uncover something of the relationship between school achievement and cognitive development in children suffering from severe visual impairment. So far, we have obtained data of a "personal" nature (family circumstances, visual acuity, additional handicaps, etc.), and have administered tests of intelligence, language competence, inferential ability, and conservation of substance. Some of these tests, together with others, will be repeated at regular intervals, and measures will be taken of proficiency in the conventional school subjects.

Perceptual training

The other major project just begun is scheduled to last three years and is concerned with developing the procedures for perceptual training devised by Barraga (1964, 1970). We had already convinced ourselves (Tobin, 1972a) of the value of Barraga's approach and our new project will build upon this, having as its principal "products" a teacher's handbook, illustrative "lessons" and materials, and, above all, a series of workshops/training sessions/seminars to which it is hoped that every school will send at least one teacher representative. All the schools have been kept informed of the steps leading up to the inauguration of this project and they have begun to receive visits from the project team. Curriculum development projects stand or fall on their ability to convince teachers of their relevance and validity. We are hoping that by having the teachers cooperating with us from the start, we shall be able to avoid, or overcome, the difficulties that can so easily arise.

Past Projects

☐ Among the projects now finished, one worthy of mention on account of its practical value to teachers was a survey of the spoken and written vocabulary of young blind school children. This investigation was part of a collaborative endeavor in which a group of teachers worked on the production of a new series of braille reading books. The whole "kit" of materials, which is being published by the Royal National Institute for the Blind and the College of Teachers of the Blind, is comprised of books, tape recordings, and tangible objects and models. The Centre's contribution was the preparation of a "vocabulary" derived from tape-recorded conversations between blind children and from their letters, compositions, and diaries. A monograph containing the word-lists has been published by the College of Teachers (Tobin, 1972b).

Teaching English to blind children

One of our externally financed investigations was concerned with the aims and methods of teaching English to blind children, and entailed the use of questionnaires, interviews, and weekly lesson diaries. Spelling tests were administered to a large sample of braille readers in schools for the blind, and an attempt was made to show the relationship between areas of deficiency in achievement and the actual amount of time spent on such things as braille, oral work, and activities concerned with compensating for the paucity and restriction of experience. This investigation of what teachers conceive of as their principal objectives and the means used to attain them has helped to indicate where we ought to be carrying out further research and has underlined the need for a fully professionally-trained group of specialist teachers. The report containing the findings has been published in mimeographed form and is available from the Centre (Norris, 1972).

Multiply handicapped blind children

Also completed within the first three years of the Centre's existence was a preliminary study of the behavior and needs of a group of mentally retarded, multiply handicapped blind children (Tobin, Hill, Leary, & Simon, 1972). The children were based in the Deaf-Blind Experimental Education Unit at Lea Hospital, Bromsgrove, England, and some two-thirds of them were rubella victims. During the course of the investigation, which extended over a period of 12 months, direct observation techniques were used to examine social interaction, stereotypies (e.g., eye-poking and rocking), vocalization, and locomotor activity. Little of an objective nature is known about the behavior of hospitalized children and it is not claimed that this particular investigation has brought to light anything completely new or of major remedial value. What has been demonstrated, however, is that conventional psychological methods of observation—time and event sampling, for example—can be of assistance to the teaching and nursing staff who are responsible for the welfare of such severely handicapped children. With appropriate training, non-psychologists can add these skills to their armory of techniques; without such skills, the people—nurses, parents, teachers—responsible for day-to-day care are unable to obtain an objective, fully-rounded impression of a child's current levels of attainment. The sufferers are the children. Without a base-line from which changes in behavior can be measured, the staff and parents are deprived of reliable information about the effectiveness of their training procedures. We do not see this concern with providing "non-specialists" with an understanding of appropriate observational and remedial procedures as being in conflict with our belief that teachers must be more professionally trained and equipped; it seems, rather, a logical corollary of such a conviction.

Condover Hall Follow-up Study

☐ Our interest in the additionally handicapped person is now focussed upon the development of methods of assessing short-term memory capacity in children who have severe visual and hearing losses. In addition, we have recently completed an enquiry into the living and working conditions of adults who were formerly pupils at Condover Hall School, which takes in blind children too severely handicapped for placement in normal schools for the blind. We were fortunate to have S. O. Myers as the investigator on this project; he was the first head teacher of the school and thus knew the more than 300 subjects participating in the project. The report is now in the process of being written and it is hoped that it will be published early in 1975. It is, of course, unusual for such follow-up studies to be undertaken. We hope that the information obtained will be of use in two ways: first, as a means of showing how far these multiply handicapped adults are being integrated into society and are being cared for in accordance with their needs; and secondly, as a kind of feedback for the school, providing evidence of the relevance of the skills and attitudes it is trying to develop in its pupils. Education is all too often seen as being self-justifying, but there is surely a need to look, from time to time, at the relationship between what is being taught in the school and the actual needs of the person in the larger society outside the school. We hope that the report of our investigation will help clarify this issue.

Self-teaching of braille

Although most of the Centre's research effort is directed toward the problems confronting the visually handicapped child, the Condover Hall study makes it clear that we are concerned also with the blind adult. A project already in existence when the Centre opened, and continued by the director on his appointment, was designed with a view to enabling newly blinded adults and adolescents to teach themselves braille with a minimum of supervision. Sets of self-instructional materials were prepared for presentation by means of brailled booklets and tape recordings. Various methods of starting braille were devised —large cell, small cell, contracted braille, uncontracted braille—and groups of adults were randomly assigned to the various "treatments." The experiments indicated that, on the average, the best results were associated with a system of teaching using a large cell and contracted braille. Other variables (such as age, tactual ability, intelligence, personality, sex) were taken into account in the hope that some understanding might be obtained of the personal factors that facilitate the learning of braille. Again speaking in terms of "averages," we found that the best learners were women of above average intelligence, above average tactual ability, who were slightly introverted in terms of personality. It was also found that attitudes toward the learning of braille were more favorable if the learners had used the large cell, uncontracted form of braille in the initial stages of learning. The completion of this project might, as so often is the case in research, have led to no more than the recording of these findings. What we went on to do, however, was to produce a final version of the large cell, contracted braille program and make this available on a free-loan basis to social workers and others who have newly blinded clients. The materials are now being used regularly by many of these "home teachers" who are also provided with a typed transcript of the tape-recorded version so that they can expand, delete, or modify the lessons in any way they think appropriate. An account of this research is available from the Centre as a mimeographed report (Tobin, 1971).

Miscellaneous Studies

☐ Some small-scale investigations have been undertaken, usually in response to requests or suggestions from teachers or charitable organizations. One such enquiry, relevant to the integration/segregation issue, was focussed on the attitudes of nonspecialist teachers toward visually handicapped pupils (Tobin, 1972c). Another was an evaluation of the Optacon (Tobin, James, McVeigh,

& Irving, 1973). It would not be appropriate to go into the details of these studies in this paper. Suffice it to say that it was because a research unit was in existence that it was possible to mount such investigations. The acquisition of experience and expertise is a slow process. Research teams have to be assembled and it is important that there be an organizational and career structure so that their hard-won experience can be used more efficiently than has been possible in the past. Europe is only slowly learning the lesson so clearly pointed out by the success of the research units of the American Foundation for the Blind and the American Printing House for the Blind. A glance, however, at the *European Register of Research on Visual Impairment* (Gill & Tobin, 1974) will bring out the diversity of topics now being researched in Europe; the danger is that, once the M.Sc. or Ph.D. has been awarded, the researcher will turn to other fields of endeavor and the visually handicapped will lose the benefits of the newly acquired knowledge and understanding that may ultimately be of more significance than the results of that first and highly specific investigation. We hope that the Research Register will itself serve to bring some unity into research by showing researchers, particularly newcomers, what is going on. There is nothing to be said for mere "duplication" of research programs, but the desirability of "replication" should perhaps be stressed, particularly in areas of investigation where concepts are as yet lacking in precision and where the appropriate methodology has not been worked out and refined.

Research Register

Assessments of Individuals

☐ Staffing, finance, and time constitute three constraints upon the Centre's ability to carry out intensive and extensive assessments of individual blind persons. Nevertheless, such assessments are undertaken from time to time. In the case of visually handicapped children, the testing is generally confined to the measurement of intelligence, the principal tool being the Williams Intelligence Test for Children With Defective Sight. As part of its "servicing" of institutions concerned with the welfare and rehabilitation of newly blinded adults, the Centre has now tested over 100 adults. The tests conventionally administered are the Cattell 16 Personality Factor Inventory, "home-made" tests of short-term memory (letter and digit span) and tactual perception, and the Purdue Pegboard. The results of these tests are then used by the staff of the institutions as part of their overall assessment of the blind client, our emphasis being on the need to see specific test performances in the light of the other information available to the counselling team. It is our intention to publish summary statistics (means, medians, etc.) as our bank of data grows so that other users can relate the performance of their own clients to that of the group as a whole. The first set of normative data on manual dexterity has recently been published in the Royal National Institute for the Blind's journal, *The New Beacon* (Tobin & Hunter, 1974), and it is expected that similar data will soon be available for the Cattell Personality Inventory.

Sharing Information

☐ Reference to our information-giving function will help American readers appreciate what we see as one of the advantages of geographical smallness and compactness. There are some 60 or so schools or units for the visually handicapped in England and Wales. We are able, therefore, to keep in regular contact with all of them at no great cost. For our own research purposes, we prepare bibliographies and make abstracts of articles printed in the specialist journals. As a matter of course, we cut stencils and send copies to all the schools so that they can build up their own reference and indexing systems. Copies of our mimeographed research reports are also sent to the schools, together with a list of the School of Education's library holdings (the books themselves can be borrowed by mail, only the return postage being paid by the borrower). The Centre is used regularly, and freely, as a meeting place for committees of teachers belonging to the College of Teachers of the Blind and the National Association for the Education of the Partially Sighted; both of these organizations have representatives on the Centre's Consultative Committee. Although we are autonomous, in that we select our own research projects, we submit new proposals to the Executive Committees of the C.T.B. and the N.A.E.P.S. for their consideration and approval. Despite the absence of any formal structure or charter laying down what will be done to ensure the flow of information, we believe that we have established a framework that allows and encourages communication and influence to flow in both directions. The pattern we have been able to set up would not transfer easily to another situation. It works for us because of the "accidents" of geography and because our research objectives bring us into daily contact with our colleagues in the classroom.

Cooperation

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Orientation and Mobility for a Totally Blind, Bilateral Hand Amputee

A. JAMES ENZINNA

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ABSTRACT: The unique orientation and mobility program for a severely injured veteran involved the use of the long cane method of mobility. The veteran's program, which also included self-care skills and recreational activities, is the most recent of several conducted at the Veterans Administration Hospital, Hines, Illinois.

The 20-year-old, U. S. Marine Corps veteran of the Vietnam War whose rehabilitation is discussed in this article is one of several blind, bilateral hand amputees who have gained a high degree of mobility and independence as a result of their experiences at the Central Rehabilitation Section for Visually Impaired and Blinded Veterans, Veterans Administration Hospital, Hines, Illinois. Many unique devices have been created and found to be very useful in the management of everyday self-care activities, including mobility with the use of a modified long cane. The purpose of this article is to share these experiences with colleagues who may benefit from what has been learned, and to acquaint them with the Krukenberg operation, its merits and applications.

Severe Injuries

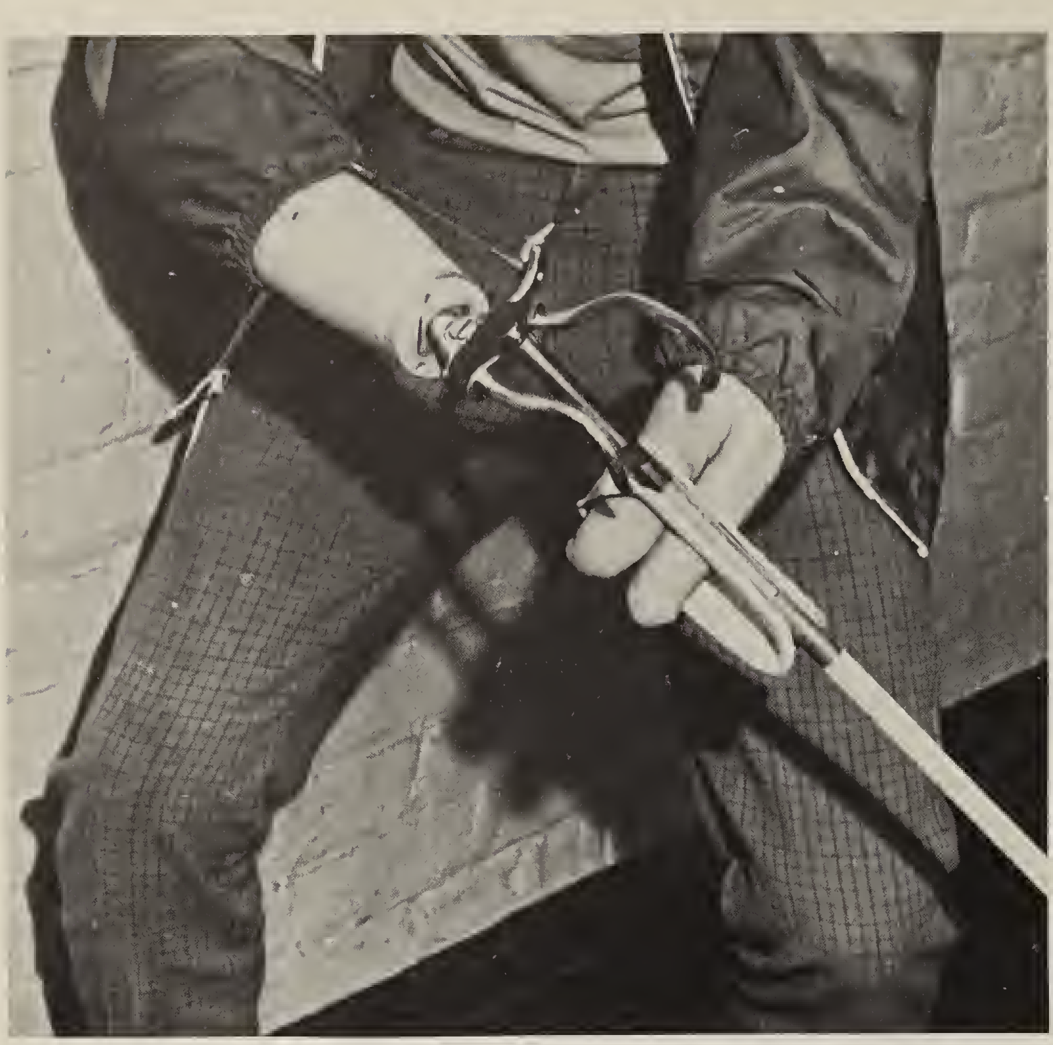
☐ This particular veteran was severely injured in Vietnam; his multiple wounds included enucleation of both eyes, perforation of both ears, loss of both hands, in addition to leg fractures, lacerations, and metal-fragmentations over his entire body. Surgical procedures included preparation of the eye sockets for prostheses, myringoplasty in repairing eardrums, and the Krukenberg on the patient's left arm. He was later fitted with a prosthetic right arm bearing a double wall-socket Homer wrist-flexion unit, Dorrance 555 S Hook, and flexible hinges with single control cable and tricepts pad.

The Krukenberg

The Krukenberg operation (forcipication of the forearm stump) consists essentially of splitting the forearm between the ulna and radius, and mobilizing the radius which then moves independently from and against the ulna. Hence, its mobility can be used in a forceps-like manner to grasp things. The recommended length is two-thirds or one-half of the forearm. The successful result is a forearm stump supplied with grasping function, a sufficient opening angle of from 30 to 45 degrees, a straight hinge-like abduction and adduction when the stump is either flexed or extended, a rate of pincer movement approaching that of normal human fingers, good sensation, and a good blood supply of the branches. Early exercises must be aimed at abduction and adduction. By merely pronating and supinating, objects are grasped with a twist; hence, rotation must be avoided.

Pre-Cane Skills

☐ Orientation and mobility training for this veteran began with the regularly prescribed program. While introducing the pre-cane skills, it was realized that the contact point for trailing would need to be the Krukenberg hand, in order to gain maximum possible tactile information. The patient utilized the prosthetic arm across his chest. He was familiarized with routes to the lava-

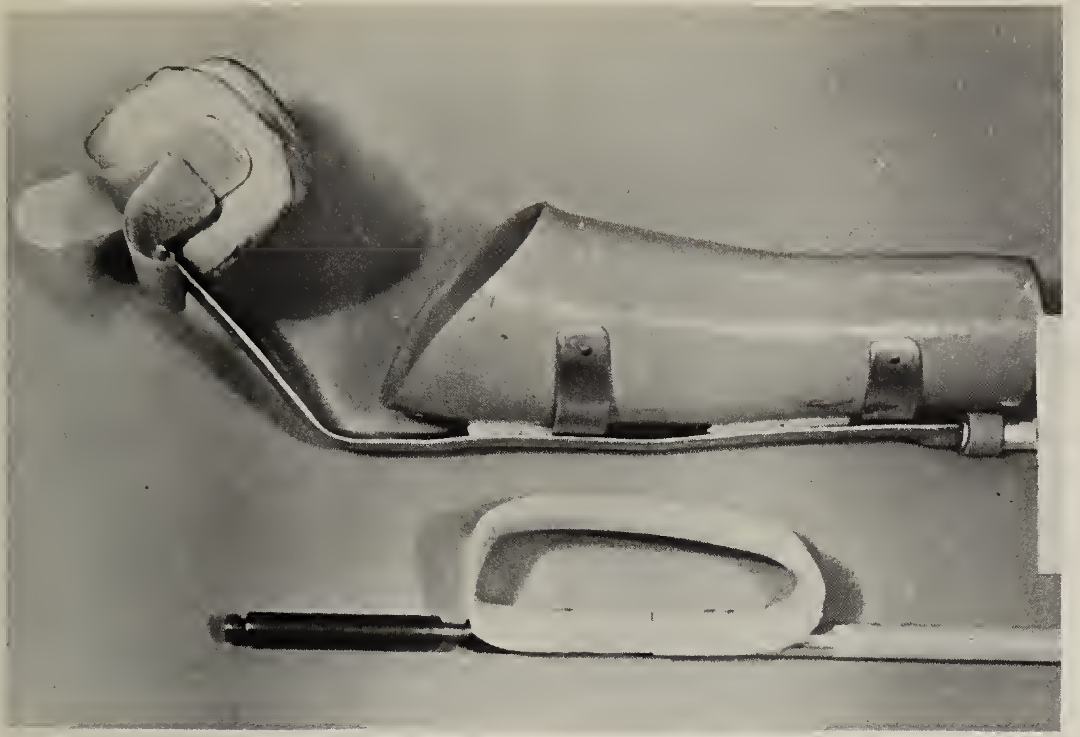


The veteran fits his modified long cane into the prosthetic hook using his Krukenberg.

tory, office, classrooms, and water fountain in the controlled atmosphere of the Blind Center. His sense of direction and his awareness were excellent, as were his responses to auditory clues, guidelines, and landmarks. His tactual response, however, was somewhat slow and in need of development due to his lack of hands. A very light contact was necessary to prevent the Krukenberg stump from injury on door frames and irregular surfaces. There was no difficulty in following a sighted guide; the patient merely applied a pincer grip above the guide's elbow, and his responses were excellent.

Adapting the long cane

In planning for mobility training using the long cane, it was determined that the prosthetic arm could be utilized for exercising the proper function of the cane. This, in turn, would allow the Krukenberg to be free to explore for tactual information. The problem, however, was to fit a long cane firmly into the grip of the prosthetic arm. With the cooperation of the Orthotic Laboratory, we were able to provide a long cane without a crook. A special aluminum collar was adapted to the cane shaft. This collar was grooved to fit and lock into the hinge of the prosthetic hand and to help stabilize and fit pressure-points of the hookgrip to prevent any free floating of the cane shaft. After many hours of placing and removing the cane from the hook with the use of the Krukenberg, the patient continued to have difficulty aligning the grooves. Subsequently, a rigid plastic loop adapter was positioned on the shaft of the cane near the



Top: The bucket attachment for holding the long cane with a Krukenberg.
Bottom: The long cane modified with a grooved brass collar attached to the head of the cane shaft and a rigid plastic loop for use with a prosthetic hook and a Krukenberg.

grip. This acted as a tool for grasping as well as a reference in placing the cane properly in the hook. The aluminum adapter was replaced by a steel one, and subsequently by one of brass which worked out successfully.

Cane Skills

☐ The veteran responded eagerly to the introduction and proper application of the long cane. However, he had many more than the usual beginning difficulties. Since the movement of the cane was initiated from the shoulder instead of the wrist and hand, there were major inconsistencies in the description of the arc and touch of the cane's tip to the walking surface. Drop-off points were particularly difficult to recognize. With considerable practice, the arm and cane movements became more exact, and the veteran's confidence in the cane began to increase almost immediately. His cane coverage was good and his arc was consistent.

Indoor travel

This particular veteran had little difficulty with introductory indoor travel throughout the Blind Center and the hospital corridors. He located various clinics and objects, exercising good cane techniques and exhibiting an unusually good sense of orientation and awareness. His memory and recall proved excellent, and he was particularly careful at intersections to retract his cane before changing directions so as to prevent tripping passersby.

Outdoor travel

As he began his introduction to outdoor travel, the veteran experienced a slight setback. It was found that his touch was too deliberate and rigid due to the mechanics of his prosthetic arm. Consequently, there were problems with his cane sticking in sidewalk cracks and shorelines. A sensitivity was developed with much work and concentration. The patient remedied his touch, while overcoming a slight bounce that he had begun to develop. He followed shorelines and located crosswalks without difficulty and became more sensitive in recognizing dropoffs as he approached stairways and curbings.

Further cane adaptations

At this point, the veteran was idled due to a breakdown in the prosthetic arm. It was then realized that without the hook to hold the long cane the patient was virtually immobile. As a result of this experience, a "bucket" cane was developed, the "bucket" being merely a molded unit that fits over the forearm and is kept stable by a degree of bend a few inches above the elbow. A cane shaft is permanently affixed to the "bucket." This particular type of cane was favored by the veteran in areas of relaxation when he chose to be without his prosthetic arm. It was handy and provided reasonable safety for mobility. The only disadvantage found was that its extra length made it awkward in some situations, such as riding in a car. With both of these canes, the absence of the cane crook was felt on occasions favoring the hanging or "parking" of the cane. In other areas of mobility, the negotiation of ascending stairways was a bit awkward since the shaft-type cane had to be disengaged from the hook and gripped near the center of the shaft. The lack of wrist movement caused the cane to fall behind its user or to point dangerously toward the top of the stairway in order to clear. Neither would offer proper protective coverage for the user while ascending. Similar situations requiring the disengaging of the cane involved his entering or boarding of buses, ascending escalators, and negotiating revolving doors. Otherwise, travel techniques throughout the program were of a standard nature.

Advanced Cane Skills

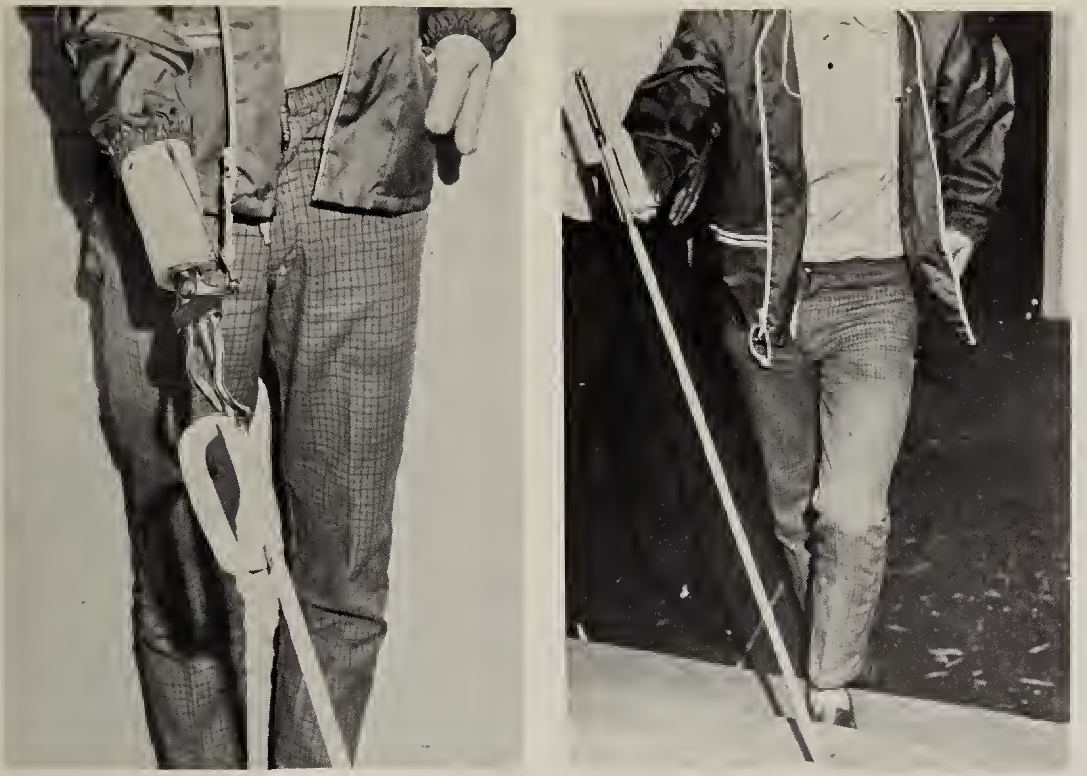
☐ The patient had no special problems in the residential phase of mobility training. He learned to anticipate curbs, change directions, cross streets safely, and remain oriented enroute over preplanned routes of travel. He exercised good judgement and abstract thinking whenever confronted with problems of intersecting driveways and parking lots. His utilization of moving traffic aided him in remaining oriented as well as in enabling him to "read" a direct line of parallel travel.

Contact with the public

This veteran's exposure to the public sometimes caused him to hear audible reactions of sympathy. After some counseling in this regard, he accepted these audible comments in a positive and realistic manner. Since the veteran was basically an amiable person, it was not difficult for him to converse with curious passersby and to relate his physical condition to the war. It seemed that the veteran's emotional stability was greatly enhanced by his occasions of open contact with the public.

Car travel

In matriculating to the business-area phase of mobility training, the patient learned to negotiate busy, signal-controlled intersections with little difficulty. His alertness and sense of timing, plus his ability to "read" traffic for lines of direction, resulted in successful patterns of travel to known objectives. This phase of training involved a home-to-store-and-return pattern of travel. He learned the value of landmarks and guidelines to entrance approaches of objectives, while gaining confidence through successful runs to locate given business establishments. When riding to starting points for various lessons of travel, this veteran negotiated the opening and closing of the car door without assistance. He trailed the side of the car with his Krukenberg to locate the door handle. At this point, he placed the cane under his arm and grasped the door handle with the hook of his prosthetic arm, and the door was opened by pressing the button with his elbow. After seating himself in the car, he closed the



Left: In describing an arc with a modified long cane, the movement originates at the shoulder instead of the wrist and hand.
Right: In ascending stairs, the prosthetic hook is used to grasp the plastic loop on the modified long cane.

door with the use of his hook, and was able to lower or raise the window using the hook. During lighter moments, the patient exercised his unique sense of humor by kicking off his shoe and lowering the window by grasping the handle with his toes.

Urban travel

In more advanced areas of travel training, this veteran learned new techniques that are unique to congested areas such as Chicago's "Loop." He was instructed in and given opportunities to utilize public conveyances, namely the local buses and elevated trains. He learned to adjust his pace to the tempo of the moving crowds, and to solicit aid effectively when in need of it. He was gracious and courteous in accepting or refusing assistance from passersby, and discovered that the public was always friendly and eager to offer assistance.

Attitude

☐ The subject's successes can best be exemplified by his philosophy toward his rehabilitation process: he often states, "You can do anything you need to do if you get mad enough." This is to say that he maintained a totally positive attitude in accepting all the challenges of blind rehabilitation. He was both rational and realistic in knowing his limitations while at the same time striving to be completely independent.

Activities of Daily Living

☐ Orientation and mobility were only a part of the veteran's rehabilitation process. Another important element was the learning and developing of skills in the self-care activities of daily living. He learned to manage his toilet and bathing needs, negotiating the water controls with his Krukenberg. For bathing, he utilized a terry-cloth glove with a built-in soap pocket. The veteran learned to identify items of clothing with the use of his face, and could locate a label on the neck of a shirt by using his tongue. Velcro fasteners were employed on many items of clothing in lieu of buttons. The subject chose to wear loafer-type slip-on shoes, thus eliminating the need for tying laces. In caring for his shaving needs, the subject found it easy to handle an electric shaver with the use of his Krukenberg and stump. A foot switch was used for controlling the power supply for shaving and using an automatic toothbrush. A large comb was easy for him to handle in grooming his hair.

Telephone

In utilizing the pay telephone, this veteran managed to lift a change purse from his shirt pocket, open and locate a dime with the use of his tongue, and insert the coin into the slot with his lips and tongue. Dialing was accomplished with the use of his tongue.

Smoking

One of the veteran's most used skills was exercised in his smoking habit. It was not too difficult for him to push the package out of his shirt pocket, grasp it with the Krukenberg, and lift a cigarette out of the package with his tongue and lips. The subject would then draw his lighter from his pocket and flip the lid with his chin. He would then ignite the lighter by rolling the flint wheel with the stump arm.

Eating

In applying eating techniques, the veteran utilized the prosthetic hook to grasp utensils while he applied the Krukenberg, holding a piece of bread, as a stopper. This enabled him to have a reference point as well as to keep from spilling food off the plate. In drinking from a glass or cup, the object was lifted with the hook and guided with the Krukenberg. It was possible for the patient to lift a glass or beverage can with the Krukenberg after he had developed a strong grasp.

Resocialization

☐ In his resocialization efforts, the veteran enjoyed such extra-curricular activities as social dancing, swimming, bowling, and golfing. In bowling, the subject utilized a guide-rail for direction, and his delivery was performed by squaring off at the line, then squatting and rolling the ball over and out of his forearms. In the golfing program, a special "Y"-shaped prosthesis was employed with an iron-type club. The head of the club had an adjustable pitch, and was easily changed with a special tool.

Bowling

This veteran did not refuse any of the challenges he faced in his total rehabilitation program at Hines Hospital. It was highly important to his adjustment merely to know that he could still function in areas he once enjoyed. It was not his intention to become proficient in any specific resocialization activity that he tried. A followup report revealed, however, that he had taken to bowling more seriously, and had two finger holes drilled for the ball to accommodate his Krukenberg. The veteran had developed enough strength in the Krukenberg to hold and swing the ball onto the alley.

A second Krukenberg

This subject returned to Hines three years after discharge to seek another Krukenberg. The operation was performed, and the veteran has returned home to further pursue his hobby of making ceramic bowls, vases, and art pieces. He felt it more useful in his hobby-business to employ two Krukenbergs, since he intends to perform all functions of the ceramic work independently.

Summary

☐ This subject has proved to be exceptional in accepting all challenges with deliberate decision. He has proven that skills can be learned and applied to make a proper adjustment for the future. He represents the ultimate in determination for total rehabilitation. It has been a challenging and rewarding experience in the rehabilitation process to have worked with this veteran.

The Blind Adolescent Life Skills Center

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ABSTRACT: The Blind Adolescent Life Skills Center provides both individual and group instruction in mobility, living skills, communication, recreation, and social relations. The program does not take place in a traditional classroom setting but tries to provide real experiences in independent living by housing the students in an apartment complex and offering services on an "on call" basis. Instruction is meaningful because it is related to daily activities. Participants acquire skills that enable them to select life styles that will be satisfactory to them when they leave the center.

Many of us have "grown up" professionally as the retrolental fibroplasia children of the fifties have been growing up chronologically. We have provided services to the largest number of congenitally functionally blind adolescents and young adults this country has ever had. We have observed and taken part in some of the most dramatic, innovative, and productive changes in educational services to blind children. Particular recognition must be given to the residential schools that have adapted their programs to fit the change in population, to the broad expansion of public school programs for the visually handicapped, and to the changing patterns of services in vocational rehabilitation and in private agencies. However, as services have become more sophisticated and sensitive to the needs of the blind, it has become apparent that there are gaps in these services. The one critical gap with which the program described in this article deals is that of providing children and youth with the skills necessary to live satisfying, independent lives.

Lack of skills

The transition from living either in a residential school or at home to living independently requires many skills, the knowledge of which, unfortunately, have been taken for granted or simply ignored by many educational services. Sighted young people learn skills such as cooking, cleaning, personal hygiene, and grooming, through observation but blind youth generally have no opportunity to learn them. Even those who attend short-term summer projects in personal management seem not to maintain their skills when they graduate from high school.

How program began

The Blind Adolescent Life Skills Center came about through the recognition of this problem by a concerned group of teachers, rehabilitation counselors, and social workers who saw young people continuing to live at home or adopting other unsatisfactory life styles simply because they lacked the skills necessary to maintain their own homes. These professionals worked with parents and local educators to obtain funding (under Title III of the Elementary and Secondary Education Act) for a center to teach skills for independent living. San Pablo, California was chosen as the location for the program because it is in a county which has several large and excellent public school programs for visually handicapped children.

The Program

☐ The program was founded on the philosophy that the center should not be a traditional school environment with classrooms, dormitories, and prescribed instructional periods but should provide a real experience in independent living, duplicating, as nearly as possible, life in the community. The Skills Center is housed in a 75-unit apartment complex. Twenty blind young adults, ranging in age from 17 to 21, occupy 10 of the apartments. They live two to an apartment, and their apartments are scattered throughout the complex. Services are provided on an "on call" or "as needed" basis. The five teachers and four teacher-assistants are available for instruction from seven o'clock in the morning to 10 o'clock at night, seven days a week, 12 months a year. Two of the five teachers are mobility instructors. Although the same curriculum can undoubtedly be found in other programs, in the opinion of the center's staff and many of its visitors this particular project maintains a unique and innovative quality. The reader is encouraged to keep in mind the setting in which instruction occurs as the curriculum is described. The personal comments of one project staff member have been inserted—just as they were originally written—into appropriate places in the text to enable the reader to grasp the atmosphere in which instruction occurs.

Areas of Instruction

☐ Areas of instruction for each participant are determined by comprehensive checklists: students indicate whether or not each item is a practiced skill and if not, he receives instruction in that area. If a participant indicates that he does have a particular skill, he must then demonstrate it to the satisfaction of the staff. By this process, a "needs profile" is established for each participant. These profiles are brailled by the participants so that they will know precisely the areas in which they need instruction. They then go on to plan their individual instructional programs with the teachers. In addition, they have the opportunity to chart their own growth and be actively involved in moving toward a date for graduation.

Priorities

Priorities among the techniques to be learned must be established. Highest priority is usually orientation to the apartment and the building (mail box, exits, garbage chutes, office, friends' apartments, etc.). Then "survival skills" are introduced: shopping for groceries (including mobility lessons for getting to the grocery store), preparing simple meals, basic financial management, use of telephone for emergencies, and roommate relationships. Remaining needs are attended to in order of their importance, based on task analysis, as developed by project staff and reflected in checklists.

Group instruction

For instructional purposes, the 20 participants are divided into five groups of four. One teacher is assigned to each group, rotating every two weeks. Every 10 weeks each group receives six weeks of living skills instruction and four weeks of mobility instruction. Instruction in communication skills, recreational and social skills, and prevocational training cuts across and is included in all areas of teaching. For example, a mobility lesson often has as its goal a recreational or social activity. Living skills instruction includes fine motor activities, a prerequisite for many vocational fields.

Individual instruction

Most instruction is provided on an individual basis. A teacher works with the participant for a minimum of two hours each day. Teacher assistants, volunteers, and student teachers are carefully trained to follow up on teacher instruction. When the teacher has finished instructing the participant, lessons are reviewed and reinforced by support staff. Participants are also urged to practice skills independently when they are advanced enough to do so. Since there are no classrooms as such, the apartment, the street, the shopping center, and the entire community are all learning environments.

October 22. P. asked me to help him make grilled cheese sandwiches. He felt he could do everything but turn the sandwiches in the skillet. I've helped him three or four times with this task—painstaking, but steady improvement. By the time he had turned all six sandwiches (three for himself and three for J.) he needed no help at all. However, getting the right amount of butter in the skillet and tipping the skillet to spread the butter evenly is not so easy. I'll bring in my pastry brush and have him "paint" some melted butter on the bread. Might help?

P. is eager for concentrated help on living skills and is getting better about asking for help.

Mobility

Mobility instruction is of primary importance. While many of the participants have had prior mobility instruction, often it occurred in the context of a school day, which resulted in problems of limited time and limited scope of mobility experiences. Also, school mobility instruction is not necessarily of practical value to the student. All mobility instruction carried out in the Skills Center relates directly to daily activities and is therefore meaningful. Teachers have found that mobility skills vary greatly: students who have had considerable mobility instruction prior to their arrival at the center quickly learn the area surrounding the project site. Others need to begin with orientation to their apartments and interior characteristics of the building. Cane technique, even among those who have had prior instruction, needs improvement and street crossings, with and without signals, require much work.

October 12. Spent two and a half or three hours with D. this morning. What a delightful person! First we had a lesson in dishwashing. He understood the concept of scraping the dishes and also used hot water (a pleasant change), but he needed tips on how to spot dirt, etc. I also taught him to wash the rims of glasses and cups carefully and to rinse his dishes well on both sides. He was so pleased to have this information. He said he had wanted someone to help him with dishes before but thought that when he came into the project he was already supposed to be able to at least do "basic things like dishwashing." I set him straight. Next we cleaned his counters. This was an arduously slow process, but I think he got a lot out of it. He learned to scout for dirt with his free hand—a huge plus in his favor.

Next we had a lesson in how to fill an ice tray, trying two methods. Then he made packaged iced tea.

D. did everything this morning with a reasonable amount of success and was very pleased with himself. I think the only ways I really facilitated his learning were by 1) keeping my voice lower and softer than usual, and most of all by 2) letting him take all the time he needed to complete a task.

Living skills

The area of living skills, which has grown dramatically since the inception of the program, contains no easily defined parameters and continues to grow as each participant demonstrates lack of confidence in a previously unidentified area. One must consider the tasks involved in moving into and setting up an apartment for the first time: arranging for furnishings, kitchen supplies, linens, and food; having gas and electricity turned on and a phone installed; opening a checking account and paying rent. Many activities which most of us were not even aware of doing for the first time are tasks which blind young adults have not learned and often have little concept of because of the lack of ability to observe others. When an individual moves into the project, he is given assistance and instruction centered around learning all these skills. Teachers begin at a level appropriate to the individual student, covering areas including personal hygiene (shaving, showering, bathing, hair care, use of deodorant), shopping, cooking (use of stove and oven, meal planning, cooking techniques, eating techniques), cleaning and apartment maintenance (sweeping, mopping, dusting, vacuuming, dishwashing, scrubbing), financial management (basic math skills, making change, understanding bank services, handling money in public, budgeting, and keeping a checking account).

Basic survival

This curriculum area has been stressed, sometimes to the exclusion of other areas, because it represents what project staff has determined as the basic survival skill. Hence, the most dramatic progress for all participants has been in this broad area of living skills.

October 5. Swept, mopped kitchen with W. Had to modify techniques to allow her use of vision. It is frustrating to teach in this half-world. When she sees something, she can deal with it efficiently. This gives her a kind of a false confidence or carelessness which often sends her rushing into brick walls.

Examples: she saw the table and chairs and moved them quickly out of the way into the living room but didn't see the garbage can in the corner until she smacked it with her broom. She plopped the mop straight into the bucket but missed the bucket entirely when ringing the mop out.

She began to sweep haphazardly without a plan. I tried to get her to work more slowly, use two hands, concentrate, and have a plan. If, after I showed her a good method, she forgot it and ran into a snag, I let her make the mistake so that she could correct it herself, thereby cementing the more workable method in her mind. I did this only for small mistakes that would not slow down the lesson or cause her too great a feeling of failure.

I felt it was a good lesson, but she will need more work. It's hard to know when she can see and when she cannot. Note: Never take her word that she can do a task—check her out.

Communication skills

A third objective is to develop communication skills. This area includes activities such as use of the telephone, braille and the typewriter for personal communication, and signature writing. Again, because many of the requirements for personal communication do not become real until the young adult is in a situation which necessitates them, it has been found that even those with prior instruction in these areas often have limited ability to apply their skills until they are living in their own apartments, relatively independent of parents and friends. For instance, the use of braille to label clothing, foods, and personal belongings was new to many participants, as was use of the telephone for making business calls.

October 8. Worked with S. on signature writing. After working with her repeatedly on raised line paper, I noted that although she had learned the necessary strokes, she kept going below the bottom line on several letters in her first name. I cut a frame out of a large piece of cardboard, somewhat like a signature guide, and this eliminated the problem entirely. It also helped her to take smaller strokes between letters. Since she will be using her guide most of the time, I see no reason not to teach her this way. Today I like my job.

Recreation

A fourth curriculum area includes recreational skills. In the early stages of the program, many indoor and outdoor recreational activities were initiated and supervised by staff members. These included hikes, picnics, camping, swimming, table games, pottery, and crafts. Although student participation was good, the staff began to question its leadership role. It was hoped that by exposing the participants to a variety of recreational activities within the community, they would ultimately take the responsibility for continuing them independently, deciding for themselves which activities they wished to pursue. However, this independent motivation did not occur so it became necessary for the staff to step in and designate the responsibility for the continuation of recreational activities to the participants. Although much of their recreation still centers around visiting with one another; listening to radio, television, and talking books; and reading, some are on their way to seeking activities within the community, and a few have organized group functions. Progress in this area is slow because the "survival skills" have priority. Because motivation and interest in recreational events is often low, the students need more direct encouragement to try new and unknown activities.

November 17. We had a "pomander party" this afternoon. C., R., G., L., and S. each busily studded an apple with cloves, then rolled it in orrisroot and cinnamon. They will make nice Christmas presents. Lots of fun. I was most interested in C.—her sight didn't help her much in this task, just as I suspected. I started her over several times: when she started to do it more tactually, it forced her to go more slowly and the result was less sloppy. R. finished hers very quickly and left. (She wasn't angry with me today—I will continue to wake her up for school, anger or no.) G. and L. both became bored with the pomanders and left (it is repetitive task), but the others loved the smells and the idea of making Christmas gifts on a rainy Saturday afternoon.

A crisis in the S. household occurred later (too long to go into), but I will note that S. couldn't quite bring himself to ask me for help. I talked to him for a while and gave him what advice I could. Later he brought me several of his homemade rolls—his way, I think, of saying "thank you" without having to verbalize it.

Worked with D. on a drama scene, using the tape recorder. I tried to be *nicely* critical (that is to say, dishonest), but A. was there and layed it on the line, saying, "D., you don't sound like you're *sad*, you're whining." Thereafter, D. stopped whining and liked the next tape much better. Lord, make me honest, it always works . . .

Social skills

Barriers

In the planning of the program an area entitled "social skills" was included. This, too, has been difficult to define because there is much overlap with other areas, recreation particularly. Initially, the area of social skills was included because it is believed that blind young people unknowingly establish social barriers between themselves and sighted people. Some of these barriers are due to mannerisms, an ignorance of personal space, lack of depth and variety of conversational topics, and a lack of awareness of the importance of personal appearance. The staff has many concerns about this curriculum area because, while we hope that participants will leave the program with the skills necessary for selecting friends, whether sighted or blind, each participant has the personal integrity and right to make his own decisions regarding mannerisms, appearance, and interaction with others. We have concluded that it is our responsibility to point out, sometimes in a very direct way, how characteristics of an individual can affect interaction with others. If the participant chooses to retain a particular mannerism, despite his awareness that this may erect a social barrier between him and some sighted people, then that is his privilege. But he deserves to know that it affects his interpersonal relationships.

October 6. D. needed very little help today getting ready for her party. I helped only with measuring water for punch and making chip dip. Her apartment was clean and organized.

The kids arrived right at 7:00 and so were bored and left by 9:00. D. mostly stood quietly aside and watched, stepping into the living room only to replenish punch glasses. I was worried that she would be disappointed when a lot of staff and staff's friends didn't show up, but she didn't seem too upset.

I am least effective when I'm feeling sorry for someone, and tonight I felt sorry for everyone . . . sitting, rocking, desperately trying to have a good time, then getting bored and quiet—leaving. K., with dirty hair, in her bathrobe. I can't even write about it coherently.

Vocational awareness and training

Vocational awareness and training were included in the original program curriculum. However, upon consultation with the Department of Vocational Rehabilitation, it was determined that there was little that the Skills Center staff could do in this area. It continues to be a concern because so much about vocations and vocational behavior could be a part of the curriculum.

October 25. M. walked in this a.m. looking very spiffy—except that his beautiful, clean hair covered his whole face. I brushed it to the side for him, then asked him to brush it. To my amazement, he had no idea of where to begin. He still brushes his hair as though it were very short. Previously, he had given me the impression that he wore his hair over his eyes as a gesture of defiance to the sighted world. Wow! Another ploy to fend off failure. It's hard to catch them all. I learn so much just by spending free moments around the participants.

I Taught Them All by Naomi John White (1937)

I have taught in high school for ten years. During that time I have given assignments to, among others, a murderer, an evangelist, a pugilist, a thief, and an imbecile.

The murderer was a quiet little boy who sat on the front seat and regarded me with pale blue eyes; the evangelist, easily the most popular boy in the school, had the lead in the junior play; the pugilist lounged by the window and let loose at intervals a raucous laugh that startled even the geraniums; the thief was a gay-hearted Lothario with a song on his lips; and the imbecile, a soft-eyed little animal seeking the shadows.

The murderer awaits death in the state penitentiary; the evangelist has lain a year now in the village churchyard; the pugilist lost an eye in a brawl in Hongkong; the thief, by standing on tiptoe, can see the windows of my room from the county jail; and the once gentle-eyed little moron beats his head against a padded wall in the state asylum.

All of these pupils once sat in my room, sat and looked at me gravely across worn brown desks. I must have been a great help to these pupils—I taught them the rhyming scheme of the Elizabethan sonnet and how to diagram a complex sentence.

Value of Education

The above quotation has made the rounds in educational circles for many years. There are obviously a number of morals to this little story, but the one which comes through most clearly and relates to the Blind Adolescent Life Skills Center is that often we teachers wonder about the priorities an educational system has predetermined for us. The teacher who wrote this story was obviously concerned about the value of the subject she taught in relation to the lives of her former students. Because teachers of visually handicapped children do not serve as large a population as regular classroom teachers and because often, particularly in public schools, they may serve the same group of children for many years, they tend to stay in close communication with former students.

Priorities

Do we all look with pride upon what our former visually handicapped students are accomplishing? Are they all independent and self-supporting? Are they assimilated into the community and enjoying full social lives? Or must teachers question the educational priorities that either they or, in many cases, the educational system predetermined. Was it really necessary to provide so many years of reading, mathematics, social studies, and English or were there other areas of learning that should have had precedence? Should teachers have examined their priorities more closely? For the retrolental fibroplasia population this is now an academic question.

Purpose of Skills Center

This is not to suggest that the professional worker for the blind measure his success by the client's degree of assimilation into the sighted community or ability to obtain competitive employment. The Skills Center views its responsibility in this area in two ways. First, we exist to present the alternatives to the current life style of the blind young adult. We do not pass judgement on what an individual elects to do with his life when he leaves the center. Our responsibility is to provide the skills and understanding that will enable blind young adults to make personal, independent decisions about their own lives. The second point is that success can occur at all levels. Some former participants are living independently in the sighted community and are prepared for competitive employment. Others leave the program with the acquisition of some skills in personal hygiene, grooming, perhaps basic cooking, and an expanded repertoire of social and recreational activites and move into facilities that provide some level of dependent care. They will live in these facilities for the rest of their lives. In both cases, the Skills Center has been successful.

The Rehabilitation Aide Project

ROBERT R. SCHEFFEL

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ABSTRACT: The purpose of this program was to determine the feasibility of utilizing trained paraprofessionals to provide specific aspects of orientation and mobility and rehabilitation teaching services to selected visually handicapped persons. After a three-month academic phase and a three-month internship, follow-up data showed good performance ratings (2.41 on a scale of 1.00 to 3.00) and agency satisfaction with the aides. It was concluded that the aide could be used to increase the delivery of orientation and mobility and rehabilitation teaching services.

Since its inception immediately following World War II, orientation and mobility training for blind and visually handicapped persons has experienced rapid growth in both demand and availability. Unfortunately, at present the demand for services has exceeded their availability. Because orientation and mobility should be taught on a one-to-one basis and because these skills and techniques are best learned through daily instruction, orientation and mobility specialists must maintain relatively small caseloads. Therefore if services are to be made available to a greater number of persons, there must be an increase in the number of qualified personnel.

The Project

Objectives

☐ The Rehabilitation Aide Project was based on a theory by Pearl and Riessman, entitled "New Careers for the Poor" (Sussman et al., 1973), which advocated recruiting paraprofessionals from minority and underprivileged groups. Its objectives were: 1) to determine the feasibility of utilizing trained aides to provide specific aspects of orientation and mobility and rehabilitation teaching services to selected blind and visually handicapped individuals, especially the older blind person, and 2) to provide employment to those individuals who may be unemployed, underemployed, or in some manner culturally deprived. The Project was to be evaluated by the number of aides trained and placed in employment as well as by a performance rating of aides to be secured by a follow-up study.

The Aide

☐ The initial identification of the specific functions of the aide and the training curriculum to be implemented in the program was the responsibility of the project director. A major assumption on which his decisions were based was that the needs of many blind persons fall into the basic areas of orientation and mobility and rehabilitation. Another important consideration was the unmet needs of the older blind person. If these services could be provided by the aide without loss of efficiency or safety, a valuable manpower resource would be shown to be available.

The project was supported by the New Careers in Rehabilitation program of the Rehabilitation Services Administration, Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare.

Suggested functions

A survey of the 11 participating agencies (that would later provide internships for the trained aides) suggested that the aide's functions be as follows: 1) to provide sighted guide and reader services; 2) to provide instruction in basic orientation and mobility and daily living skills, including the techniques of using a sighted guide, hand and forearm, trailing, direction takers, diagonal, touch, stairs, familiarization, independent orientation, block travel, rote street crossings, locating lost objects, seating, entering and exiting automobiles, home management, personal management, and limited communications; 3) to provide orientation services; 4) to provide transportation services; 5) to construct and repair canes; 6) to assist with recreational and leisure time activities; 7) to assist with the conducting of in-service training programs; 8) to provide on a rote basis instruction in methods of safe and independent street crossings in situations of rural or uncongested traffic; 9) to conduct on a prescription basis follow-up evaluations to determine if additional training is necessary; and 10) to conduct on a prescription basis drop-off or independent lessons with advanced travelers. As this feedback was secured from the agencies, changes were made in the original concept as to the functions of the aide. The most significant change was an increase in instruction in rehabilitation teaching techniques.

Qualifications

In order to perform the above duties successfully the minimum qualification standards for a rehabilitation aide included possession of a high school diploma or its equivalent and two years of experience, paid or unpaid, in which the ability to function successfully in a helping capacity was demonstrated (such as volunteer work). Educational and experiential qualifications were interchangeable on an equivalent time basis.

Salary and benefits

Each aide received a salary of $3,000 and fringe benefits not exceeding 10 percent of the gross salary during the training program. Aides who did not live within commuting distance of the training program received transportation and maintenance benefits, including housing in local hotels and motels.

Training Program

☐ The six-month training program consisted of a three-month academic phase and a three-month internship. The academic phase was conducted at the Virginia Rehabilitation Center for the Blind, a residential facility of the Virginia Commission for the Visually Handicapped, in Richmond. The following were required courses: Blindness and the Blind, Techniques of Orientation and Mobility, Techniques of Rehabilitation Teaching, First Aid, Gerontology, Communications, Light and Vision, and Orientation to the Rehabilitation Aide Position. Four days a week were alloted to class work; the fifth was devoted to special projects, field trips, and review.

Classes

Each of the five groups of aides trained averaged 364 classroom hours. In order to encourage learning, the atmosphere was one of informality. Role playing techniques were frequently utilized in the absence of a practicum experience, and observation of classes at the Rehabilitation Center added experience of a practical nature to the academic phase.

Internship

The internship phase of the training program was conducted at participating agencies in other states. Each interning aide was supervised by a certified orientation and mobility specialist and/or a certified rehabilitation teacher. The utilization of other agencies not only enhanced the quality of the total experience and made the aide concept known to more people, but also allowed Rehabilitation Aide Project staff to devote more time to the recruitment and training of additional aides.

Follow-up

Training groups

☐ Five groups of aides, with three to six aides per group, 21 aides in all, were trained within a 22-month period. Academic and internship periods ran for approximately 12 weeks each. It was impractical to train effectively more than six aides in a class. Although subject matter did not vary with the number of aides per group, problems such as unequal learning rates and personality conflicts were more easily dealt with in groups consisting of four or less.

Data sources

Follow-up data on the aides was provided by the administrator and the supervisor from the employing agency and by the project director as well as the aide himself. Information was obtained by the project director through personal interviews. Data was available on only 13 aides. Of the remaining eight, four were still in training, two had returned to college, one was temporarily unemployed due to relocation, and one had left the field for other employment.

The aides

There exists no significant correlation between the educational levels and performance ratings of the aides. Of the 13 aides, five are college graduates, four have completed at least one year of college but have not graduated, and four are high school graduates with no college experience. Although their educational levels are much higher than was originally anticipated, the Project required only the previously stated qualifications (high school diploma, plus experience). Eleven of the aides are Caucasian, one is Black, and one is Chicano. Seven are male and six, female.

The agencies

Nine aides are employed in private agencies and four in public agencies. Agencies are located in Arizona, California, Indiana, Maine, Maryland, New Jersey, New York, South Dakota, Virginia, and Washington. This geographic distribution came about as a result of the necessity of securing employment commitments prior to training. Supervision of the aide is provided by a certified orientation and mobility specialist or certified rehabilitation teacher (in nine cases), by an administrator (in three cases), or by a vision teacher (in one case).

Performance ratings

Administrative feedback

The administrator and supervisor of the employing agency and the project director rated the performance of each aide on the basis of poor (1.00), average (2.00), and excellent (3.00). Aides received an average rating of 2.54 from administrators, 2.38 from supervisors, and 2.30 from the project director. The average rating from all three sources (2.41) reflects the level of satisfaction of the agencies with regard to the performance of the aides. Aides are receiving yearly salaries ranging from $5,200 to $8,600, with an average of $6,888. Ten of the 13 administrators anticipated salary increases for the aide within one year. Eleven indicated that they plan to continue employing the aide and 12, that they plan to employ additional aides. Nine of the administrators believed that aides could fulfill additional agency needs, including added rehabilitation teaching activities, physical conditioning, work adjustment, additional mobility training, and social casework assistance.

Supervisory feedback

On the average 3.25 hours per week were devoted to direct supervision of the aide. Based upon their observations, seven of the 13 supervisors believed the aide's knowledge of subject matter pertinent to job functions to be excellent; the remaining six rated it as average. Over 75 percent of the supervisors described the aide's ability to establish rapport and both personal and professional relationships with other staff as average or excellent. Ten considered the aide a reasonably steady worker who keeps work up-to-date. On the average, supervisors estimated that the aide devotes 46 percent of the working day to instruction in orientation and mobility, 35 percent to rehabilitation, and 19 percent to other activities, including social work, vocational evaluation, and provision of transportation.

Technique ratings

Supervisory ratings of the aides with regard to specific techniques showed (on an average including all of the techniques) 12.4 percent as poor, 42.4 percent as average, and 27.6 percent as excellent, with 17.6 percent considered "not applicable" since not every aide was involved with every technique. Nine of the supervisors were of the opinion that the aide's work contributed significantly to the agency's total effort. In view of the needs of those clients being served by the aide, all supervisors believed an aide could be employed in place of a certified instructor. Finally, ten of the supervisors believed that the aide was adequately prepared for the functions assigned. The remaining three listed numerous personal inadequacies as the major limitation of the aide.

Aide feedback

All 13 of the aides believed they contributed sufficiently to the agency and that other staff members accepted and recognized their contributions. While five indicated that they do not plan to continue working for the agency in which they were employed, all plan to remain in the field of work with blind and visually handicapped people. Eight are planning to increase their formal education, while 11 believe that the training they received has adequately prepared them for their present duties.

Conclusions and Recommendations

Evaluation criteria

☐ The criteria by which the Rehabilitation Aide Project must be evaluated includes: 1) the number of aides trained and employed and 2) the relative performances of the aides. With respect to the former criterion, 17 (81 percent) of the 21 aides are presently employed within the field of work with blind and visually handicapped people. Unfortunately, the short duration of the demonstration program has prohibited an evaluation over a more significant period of employment.

Performance

In regard to the latter criterion, data was secured from sources offering different perspectives of the performances of the aides within the agency structure. It is from an administrative perspective that the aides received the highest performance rating. The satisfaction of administrators is further exemplified by their plans to employ additional aides. Demands for aide personnel by agencies that have not employed them previously are increasing. At the time the training status of the Rehabilitation Aide Project was terminated, 10 such agencies had requested aides. The ratings rendered by supervisors, most of whom are certified orientation and mobility specialists or certified rehabilitation teachers, are also indicative of satisfaction with the aides. Within the confines of this criterion, it is evident that it is feasible to utilize aides to provide aspects of orientation and mobility and rehabilitation teaching to selected blind and visually handicapped people.

Predicting success

Any significant reduction in the duration of the training program is not recommended. In retrospect, it is unlikely that aides would have been able to absorb the necessary training in less than six months. While some of the aides did progress at much faster rates than others, educational qualifications did not prove to be a predictor variable. Rather, success appeared to be correlated more with personal qualifications, including maturation, empathy, and a desire to function in a helping capacity. Of those aides who did experience difficulty in the training program, many nevertheless proved to be of significant value to the employing agency.

Clients' needs

It is recommended that aides be assigned clients whose needs are of the nature that the aide has been trained to fulfill. The utilization of the aide in this manner appears to have certain inherent advantages: 1) the fulfillment of the client's needs is not dependent on an additional instructor; 2) the aide has the opportunity to attain greater role identity and, theoretically, becomes better adjusted to the job and its responsibilities; and 3) the administration is able to define more clearly the role of the aide within the agency.

Summary

☐ The major objective of the Rehabilitation Aide Project was to determine the feasibility of utilizing trained aides to provide specific aspects of orientation and mobility and rehabilitation teaching services to selected blind and visually handicapped individuals, especially the older blind person. The six-month training program consisted of a three-month academic phase and a three-month internship. Eleven participating agencies provided the internship experiences. An employment commitment for each aide was secured prior to recruitment and eventual training. All aides received a salary and various fringe benefits during the training program.

Twenty-one aides entered the training program within a 22-month period. Follow-up data was secured on 13 aides; the majority of the remaining eight aides were still in training or had returned to college. The performance of the aides was rated by the administrator and supervisor of the employing agency as well as by the project director. Most supervisors were either certified orientation and mobility specialists or certified rehabilitation teachers. On a scale of 1.00 to 3.00, the average performances rating of the aides from all sources was 2.41. In addition to the high performance ratings, the satisfaction of agencies was demonstrated by an increased demand for aide personnel.

Within the limitations of the follow-up study, it is evident that properly trained rehabilitation aides may be utilized to increase the delivery of orientation and mobility and rehabilitation teaching services to selected blind and visually handicapped individuals. In order to provide more conclusive data, a second follow-up study will be conducted in the spring of 1975.

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Psychological Considerations of the Child With a Progressive Terminal Condition in a Residential Setting

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ABSTRACT: Psychosocial aspects of dealing with the child with a progressive terminal disease are discussed, particularly in relation to areas of concern for the psychologist or counselor in a residential program for visually impaired children. Areas of concern include parental and sibling attitudes and ways of coping with the fact that the child is dying, as well as the roles of teachers, houseparents, and other professionals. It is suggested that the psychologist help the family to accept the child's condition without withdrawing emotionally from the child, help the professional staff by acting as coordinator of the treatment team and aiding them in dealing with their own negative feelings toward the child, and act as a "professional friend" to the child, who must have someone with whom to discuss his fears and questions about what is happening to him.

Juvenile amaurotic idiocy, cerebromacular degeneration, and lipid disorders may differ slightly physiologically, but all indicate a terminal condition of total degeneration of the individual accompanied by tragic implications of stress on all involved with the child. The following is a brief review of psychosocial aspects of such conditions with suggestions for specific areas of concern for a psychologist or counselor in a residential program for visually impaired children.

Medical Aspects

☐ Deteriorating or degenerative disorders in blind children commonly result from several physiologically different conditions, including juvenile amaurotic idiocy, cerebromacular degeneration, lipid disorders and the more commonly known infantile amaurotic idiocies (Tay Sachs, etc.). The differences between these syndromes is esoteric. Therefore, for the purposes of this paper, all syndromes will be subsumed under one category and referred to simply as deteriorating or degenerative conditions with no attempt to differentiate between the several specific conditions.

Clinical manifestations

While there are variations among the several conditions, the clinical manifestations of progressive deterioration remain fairly similar. Birth and early childhood are usually uneventful with development following the normal pattern. The first pathological sign is often decreased vision, although sometimes seizure activity or diminished mental ability may be a presenting problem. Psychotic manifestations often accompany the slowly progressing disease, raising the possibility that some cases are misdiagnosed. Convulsions are nearly always present during the course of the disease. Toward the last stages, various neurological signs may be found: paralysis in flexions of the extremities, uncoordinated movements, nystagmus, deafness and so on. Death usually occurs in the late teens (Spaeth, 1971; Basson & French, 1971; Jervis, 1959).

Residential school's role

Because the degree of the disease's manifestation is constantly changing, it is unlikely that a residential school for the visually impaired will provide service throughout the entire course of the disease. The child may come to a residential program when the schools in the local community can no longer provide a program or when the presence of the child becomes too stress-provoking within the home. Since schools for the visually impaired rarely are organized to provide care for the extremely limited with no self-help skills, the child will reach a point at which he will no longer be appropriate for that program. The final move is usually a state-supported institution for the severely mentally retarded. Thus a school for the visually impaired will rarely see the child as a "normal blind" child, nor will he be seen in the final vegatative stages just before his death.

Psychological needs

Differential diagnosis may require extensive medical procedures which are usually available only in a medical center setting. Diagnostic techniques may be bewildering and sometimes painful. If treatment is sought at a teaching facility, the patient may well be displayed and discussed as an "interesting case," giving rise to fears and misconceptions on the part of the patient and/or his family. The American medical training model pays scant attention to the emotional facets of the patient. "Not only is the physician frequently a rank amateur in the psychological care of the dying, but he may be further incapacitated by his own neurotic anxieties" (Anthony, 1973, p. 102). One cannot assume that psychological or emotional needs have been met by the attending physician or staff members in the hospital at the time of diagnosis. It may be for the residential school professional to reinterpret careless statements overheard by the child, to explain technical jargon, and to work through the child's concern about hospitalization, treatment, condition, and future.

The total child

The psychologist needs to be aware that repeated trips to the hospital for medical evaluation or treatment can be extremely traumatic to a child and should be prepared to deal with psychological manifestations should they appear. It would seem appropriate for him to communicate with the child's medical supervisor in advance of a scheduled evaluation so as to apprise him of the child's concerns and current psychosocial condition. The psychologist or counselor may be in the unique position of being the only professional who is dealing with the total child. As such, his concern about the child in the medical setting is an expression of his professionalism; since he also sees the child on a regular basis, he is in a position to add a valuable new dimension to the doctors' medical evaluation.

Parental Concerns

Coping behavior

☐ The parents of a child with a progressive terminal condition are dealt a staggering blow by the diagnosis. While the gradual progression of the disease allows parents to face one problem at a time as the child passes through the several stages, the ultimate truth which they must face is that their son or daughter is dying. In general, parents faced with the death of a child will develop coping behavior which permits them to meet this significant threat to psychological stability while continuing to function effectively (Friedman, 1963). Such behavior may be judged "good" or "bad" depending upon one's point of view. For example, parents who deny the reality of deterioration create problems for those who are working with them by their "bad" coping behavior. From the parents' perspective, denial may be the only mechanism available at that particular time which will allow them to continue to deal with the daily life away from the child—it is their "good" coping behavior. In such a situation, it behooves the psychologist to seek the reasons for this behavior and to secure appropriate therapy that will aid in working through immediate problems.

Parent groups

Mattsson (1973) recommended association and identification with parents of similarly afflicted children and pointed to advantages of this technique in dealing with families in distress. Friedman (1963) identified the value of such activity as allowing the parents to view others in similar positions to see how they handle the grief process without going to pieces. However, the likelihood of establishing a viable group at any point in time is lessened by incidence figures, making the organizational aspects and management of such a group a difficult task.

Stages of grief

Fear

Parents of terminally ill children go through identified stages in the grief process, referred to by one expert as the FAGS syndrome: fear, anger, guilt, and sorrow (Rothenberg, 1973). None of these stages are mutually exclusive: there will be overlap and no parent will escape these feelings. Fear may include apprehension not only for the child, but for what will happen to the rest of the family, how expenses will be borne, whether the disease will appear in other children, what relatives will say, how the parent will manage himself, and the unknown. Futterman and Hoffman (1973) noted that active information seeking helps parents reduce anxiety by attempting to use intellectual power to gain some sense of control over the uncertainty of what will happen next.

Anger

Anger is frequently expressed at doctors who seem unable to offer any hope and may center around a relatively minor occurance in which the parents perceive that they were treated improperly. Occasionally this anger will result in complete withdrawal from "professionals" since they did not provide the kind of help needed. Such a family can present major complications; their anger becomes, in effect, a denial of the ability of outsiders to offer any meaningful support. Mattsson (1972) found it common for parents of handicapped children to show attitudes of critical superiority toward health specialists. Anger may be expressed at educational staff for their inability to maintain continued intellectual growth in the child.

Guilt

Sorrow

Guilt is particularly lethal in conditions with a genetic component. In this writer's experience, guilt of this sort can make it impossible for parents to place normal demands on a child, resulting in a chaotic home situation which becomes both unbearable and "deserved." Sorrow, as expressed in mourning, is necessary to the process of giving up the child. However, mourning cannot be sustained for an extended period of time without repercussions. Many parents faced with a child's terminal illness seem unable to focus on the child but move directly into the mourning pattern and become preoccupied with the loss and their personal tragedy (Hamovitch, 1963). Because the period of dying is so prolonged in these deteriorating conditions, this sorrow/mourning is apt to be extended over an interminable time. Parents ready to cease their sorrow may become angry with the child for taking so long to die, thereby creating a fresh source of guilt (Rothenberg, 1973).

"Living dead"

Easson (1970) in *The Dying Child* identified a condition which seems to be particularly applicable to the degenerative child. As opposed to those families who cannot accept the inevitability of death until it occurs, some families sever emotional bonds prior to death, creating the tragic situation that Easson has labelled the "living dead."

> If the child takes a long time to die, the parents and the relatives may have completed most of the mourning process even before he does die. While he is still alive, the family may have withdrawn their emotional investment in the youngster and really have very few meaningful emotional ties to him. Their visits may become perfunctory and merely a family duty. Their conversation and their play with the dying child may now be without spirit or real involvement. The child's toys, clothing and other belongings may be given away before the child is dead. The funeral may be arranged. In such situations, the child may be emotionally dead as far as the family is concerned while he is still physically alive . . . (p. 78).

Involvement

Easson cautioned that if possible, this condition should not be allowed to become fixed because of the distress that it will bring to the child. Parents should be meaningfully involved in the treatment of the child and not be encouraged to reinvest their emotions elsewhere, in effect rejecting the cruel reality of their child's condition. While this may be adequate coping behavior for the parents, it deprives the child of vital emotional support and permits him to become isolated, often without his really knowing why. The psychologist at the residential school should seek to involve parents in school happenings to encourage the parents and the child to maintain their emotional investment in each other.

Best adjustment

Hamovitch's (1964) study of the families of terminally ill children supported the contention that the family least likely to suffer long-term effects from the trauma of death is the one which was well-balanced prior to the onset of the disease. In contrast to Easson, he suggested that the family that could become involved in ongoing activities in the home, *apart from the dying child,* seemed better able to handle the eventuality of the child's death. However, families that participated in hospital care during the terminal stages of the illness seemed to make the easiest adjustment.

School participation

This study carries implications for a residential school. First, parental involvement in care and decision-making is valued. Second, involvement in ongoing home activities should be encouraged. The residential worker needs to attempt a careful balance of fostering (or requiring) parent participation in school activities coupled with encouraging them to provide an active and "normal" home life.

Early acceptance

Mattsson (1972) considered the parents' early acceptance of their child's condition crucial to the personality development of the child. This point is frequently overlooked; even the child with a terminal condition continues to achieve some degree of development. He, too, is entitled to as healthy an environment as possible. It is interesting that Mattsson stresses *early* adjustment, suggesting that the residential psychologist must make an initial assessment of the parents' adjustment in order to set in motion referrals and/or counseling to aid in this adjustment.

Detachment

Natterson's (1973) concept of detachment has special meaning for the child in a residential school; it becomes possible for the parents to withdraw their emotional investment in their child as a member of the family over a period of time by "sending him away." The concept of sending him to school may be less threatening than the thought of hospitalization. Under these conditions, school vacations become tolerable interruptions in the anticipatory mourning process, but the prospect of receiving the child back home on a permanent basis may be unbearable. Once again, the psychologist may find himself trying to strike a careful balance between the parents' need for detachment versus the child's desire to feel the emotional security that is found in the family.

Facing the facts

Wolters (1973) emphasized that it is imperative that those dealing with parents of terminally ill children offer complete and frank information. In his opinion, individuals vary in their capacities to be physically involved with their child's care, but, in all cases, the complete truth of the disease, treatment, and prognosis must be given. This view was borne out by this writer's personal experience with a group composed of mothers of terminally ill children. Seemingly without exception, these mothers counseled this psychologist to "level" with parents. (Denial appears to be an unsatisfactory mechanism when practiced by all of the people all of the time; there must be at least one arena of truth.) This particular parent group, organized under the auspices of a metropolitan medical center, practiced facing the facts as well as complete information sharing by all of the professionals concerned with the care of their child. The lack of pretense was both refreshing and profoundly moving.

Counseling

Froyd (1973) poignantly portrayed the need for family counseling for the severely visually handicapped child and his family but realistically cautioned that it is all too frequently unavailable. It is suggested that the residential school needs to extend its scope into the community in order to secure this vital service for the visually impaired degenerating child and his family, either through direct service or by obtaining a viable referral source. Schnell (1974) suggested that parents receive counseling oriented toward their child's needs and rights and the remaining rewards as well as the exploration of their need to give to the child.

Effect on Siblings

☐ Little seems to have been done in researching the effects of terminally ill children upon their siblings. It may be expected that many of the problems of the parents will also appear in the siblings, but a more specific analysis than this is desirable.

Younger siblings

It is possible that younger siblings may not be informed of their sister's or brother's condition in the belief that they cannot comprehend it. This form of depreciation of the younger child's role may lead him to question his value as a family member. He is aware of his brother's or sister's condition, he can observe evidences of stress in the family, he knows about trips to the doctor and hospital, other children ask him why his brother or sister looks or acts so "funny," and he may overhear parts of conversations that are difficult to understand. Yet when he asks questions, he may be put off with an unsatisfactory answer. Rarely can a child withstand such treatment without lasting effect.

Problems

In *The Child in His Family*, Binger (1973) enumerated the following problems common in siblings of dying children: enuresis, headaches, poor school performance, school phobia, depression, severe anxiety, and persistent abdominal pains. Of his own work with support of siblings of leukemic children he reported concerns with

> . . . their inner feelings of being responsible for the sibling's death, fears that they will be next, resentment that the parents spend so much time with the ill child, anger at the parents who "allowed" the sibling to become ill, and preoccupation with inner fantasies around death (p. 207).

Reactions to death

A great many factors determine how a particular child may react to the chronic illness and death of a sibling. Cain et al. (1964) reviewed data relating to sibling's reaction to death and reported the following:

> Reviewing the clinical data, the determinants of children's response to the death of a sibling we found to include: the nature of the death; the age and characteristic of the child who died; the child's degree of actual involvement in his sibling's death; the child's preexisting relationship to the dead sibling; the immediate impact of the death upon the parents; the parents' handling of the initial reactions of the community; the death's impact upon the family structure; the availability to the child and parents of various "substitutes"; the parents' enduring reactions to the child's death; major concurrent stresses upon the child and his family; and the developmental level of the surviving child at the time of the death, including not only psychosexual development, but ego development with particular emphasis upon cognitive capacity to understand death. The effects upon the child obviously are not static, undergoing constant developmental transformation and evolution (p. 750).

Needs

Too frequently workers in a residential setting are concerned only with the child before them, disregarding the needs of others who may be within their reach. The psychologist cannot ignore the remaining children in the family; it becomes incumbent upon him to explore their needs.

Professional Staff

☐ Oremland and Oremland (1973), Hamovitch (1964), and Natterson (1973) reported findings that imply support for residential placement during portions of the course of the child's disease. How soon the family should seek such placement and for how long is unique to the individual situation. Determining factors include parents' acceptance of the condition, stability of the marriage, availability of local resources, number and condition of siblings, adjustment of siblings, and the degree of the disease's effects on the child. Since often blindness is the first impairment to appear, it seems clear that these children will remain a constant part of the population in schools for the visually handicapped. An estimated six percent of the enrollment of the Kansas State School for the Visually Handicapped in 1973 were diagnosed as degenerative; one may speculate that this ratio is representative.

Teacher's attitudes

Management of children as they progressively lose functional skills may present problems to the staff of a residential school. Teachers find it difficult to feel positive about a student who fails to show progress. Such failure not only suggests "poor teaching" but can be demoralizing or can lead to feelings of anger at the child, who seems to be resisting the teacher's attempts. The teacher not only needs information about the child, but also needs the security that administration and peers are accepting of her efforts and will not be critical for "failing to teach." This does not mean that she should simply mark time with meaningless activity. To the contrary, the teacher should employ continuous assessment so as to present challenging material *on the child's current level,* resisting the impulse to bemoan what he used to do versus his present level of functioning. The psychologist who has an understanding of curriculum and special education techniques, as well as the psychological implications of the condition, can provide important support to teachers.

Houseparents

Houseparents or dormitory supervisors also require information regarding expectations during the progression of the disease. It may be most distressing to the houseparent who is accustomed to dealing with adolescents to face a teenager who has regressed to a much lower level of functioning. Roommates, dormitory friends, and schoolmates become aware of the student's diminished ability to care for himself or participate in school activities. The houseparent is most frequently called on to interpret and/or answer questions. In order to be most effective, he must have some knowledge of the child's condition as well as skill in dealing with children in general. The psychologist must be available to provide advice and assistance.

Psychologist's role

Solnit (1973) suggested that in general, those who elect to work with children seem to do so because of a fascination with their vigorous, colorful characteristics. A dying child confronts them with the antithesis of this ideal. Rothenberg (1973) reported that the dying child is likely to produce a sense of failure unless the professionals who serve him can come to grips with their own conflicts and are able to value the support they can provide. Pearce (1973) postulated that the psychologist become a coordinator between the various services in the child's life, interpreting, informing and supporting where needed, with the ultimate function being that of a "professional friend" in whom all parties can confide their fears and concerns.

Dealing with the Child

☐ The child with progressive deterioration presents multiple problems to the psychologist beyond those previously enumerated. Initially, the psychologist must reconcile his own feelings regarding death of a child and his own ability to deal with the significant people in the child's environment. As cited earlier, Rothenberg (1973) emphasized that all professionals must come to grips with the fact of the child's eventual death and their role during its approach. Easson (1970) acknowledged the difficulty inherent in working with dying children but stated that an emotional investment as part of normal mourning will allow "caring" behavior. Assuming that the psychologist can work through his own emotions regarding a deteriorating child and can retain an investment that would foster caring behavior, he may then become the "professional friend" recommended by Pearce (1973).

Counseling

Anger

Deteriorating children need counseling. This writer's personal experience has led her to appreciate the stress placed on the child as he gradually experiences more and more difficulty. Counseling contacts with these children have pointed out their frustration, confusion, loneliness, and anger. Anger may be the most frequent presenting problem in a referral to the psychologist and cannot be dealt with as an isolated factor. Basically, it has been the author's experience that such students appear to be angry at parents who cannot or will not answer questions, with themselves for their reduced ability, and at life in general because it is so unfair. As is the case in much anger, a compounding problem is the guilt engendered by the open display of the child's rage, which Rothenberg (1973) feels occurs naturally in the dying child at least at one point in time.

Awareness of disease

Verdick (1973) reported that all terminally ill children know of their conditions. Age does not seem to be a factor in the child's ability to identify the fact of the disease and the reality that he could die from it. A strong argument was made to support this position: the thesis seems applicable to children who suffer mental deterioration as well.

Parents' concealment of truth

The experiences of Futterman and Hoffman (1973) led them to believe that parents generally try to shield their children from knowledge of the nature of their illness. This has the effect of dehumanizing the child and isolating him from discussion of the current most important event in the family. The communication of feelings is generally allowed as long as the subject of death is avoided, giving the child only partial relief. That is, the child may be allowed to verbalize anger or fear but the cause for these feelings may not be acceptable for discussion. Solnit (1973) emphasized that psychic pain can result from the adult's prohibitions against talking about the child's condition when the existence of his disease is undeniable and that this psychic pain is no less real than somatic pain. Wolters (1973) cautioned that maintaining a false optimism or even a vague silence can lead a child to become even more apprehensive than if he were told the truth.

Psychologist's role

This, then, becomes an important role for the residential psychologist: interpreting, explaining, and reacting in a counseling manner to confidences as the child's professional friend. The psychologist need not make the decision to tell the child about the disease since it is likely that he already knows at least something about his condition. The psychologist can offer an opportunity for the child to be free to express his fears and to question. He can reinstate the child's concept of himself as a living person whose right to be heard and helped is to be respected.

Confidentiality

In this matter, confidentiality becomes an issue which the psychologist must resolve. Serious ethical questions arise when considering topics the family will not or cannot tolerate—should he enter these areas only with the family's knowledge? What if they deny him the right to talk with the child regarding his condition? And what of the child who does not want his parents to know of his fears and anxieties? Should the psychologist make a special effort to inform the parents that the child knows much more than they think he does? These and similar questions may arise as the case progresses.

Multiple impairments

A unique aspect of dealing with the deteriorating child is the fact of multiplicity of effect of the disease. Not only is the child dying, he also is blind, mentally retarded, emotionally disturbed and physically handicapped. All conditions will require specific attention during the therapy process.

Treatment team

Although the psychologist may become a significant element in the degenerative child's life, he is cautioned that he is but one member in a treatment team composed of all those who touch the dying child (Easson, 1972). Perhaps the most vital function of the residential psychologist is to utilize his opportunity to coordinate this team so as to ensure a flow of positive regard for the child at any given time and to sustain the child, his family, and the other team members throughout this experience. In this respect he becomes indeed a professional friend.

> The care of the child who is dying poses a family and the professional helpers with one of the greatest management tasks; the same task opens to these people one of the richest experiences that life can offer (Easson, 1972, p. 95).

Summary

☐ Children who are dying from a degenerative disease arouse intense feelings in the people who surround them. Parents and relatives must anticipate not only the eventual death, but the loss of the expected normal child as well. Mourning progresses through several predictable stages that confront not only the family, but also the child. In addition, those who serve him during the varying stages of his disease are subject to disturbing and confusing emotions. To some, the child obfuscates their purposes by failing to thrive; others may find it difficult to deal with their own emotions regarding death.

Central to the situation, the child himself may become confused, dehumanized and isolated by adults' attempts to deny the reality of his condition. Although he may not have been directly confronted with the facts, it is likely that he is aware of the greater implications of the disease—he already knows the obvious consequences. Despite his limited life expectancy, by virtue of his current existence he is entitled to thoughtful, empathic treatment in the present. A psychologist in a residential school, acting as a professional friend, may be instrumental in aiding the child, his family, and others significant to his psychosocial well-being.

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LC Conducts Braille Reader Survey

Questionnaire Survey

The Library of Congress' Division for the Blind and Physically Handicapped (DBPH) and Government Studies Systems (GSS) recently collaborated on a study to provide current information on the characteristics and readership preferences of braille readers served by DBPH. The information was obtained through a nationwide questionnaire survey of more than 1,700 braille readers selected from four braille publication subscription lists: *Braille Monitor, Braille Forum, New Outlook for the Blind,* and *Braille Book Review* (which served as the basic sampling source). The program was initiated to aid DBPH in carrying out its policy and program planning responsibilities.

Characteristics of readers

The overall return on the questionnaires was 40 percent, which indicated that braille readers are interested in the nature and scope of the library services offered by DBPH. The data revealed that 58 percent of the respondents were women; 42 percent were men. Nearly half of the respondents (47 percent) were in the over 40 age group, with less than 10 percent in the over 60 group. Students represented about one-fourth of the respondents. Forty-four percent of the respondents from the combined lists were employd either full- or part-time; 15 percent were retired; and 41 percent were in the not employed category. The most significant variation in employment status was the 82 percent of *New Outlook* respondents who were employed full- or part-time.

Reading Preferences

☐ Almost three-fourths of the respondents indicated an ability to use media other than braille, but 50 percent of their reading volume was with the braille form. The readers were evenly divided on the question of whether they needed mostly magazines or mostly books, but *Braille Book Review* respondents showed a much higher preference for books than those on the other three lists. Forty-five percent of all the respondents stated that they read an average of two to six books per month. More than 80 percent indicated that they read more than two magazines per month, and nearly one-third stated that they read more than seven magazines.

The respondents ranked entertainment as first preference for subject matter in books. Following entertainment, the order of preference was general information, hobbies, education, reference, religion, and vocational-professional. The preference in magazines, however, ranked general interest first, then entertainment, news and public affairs, professional-vocational, and special interest.

Regional libraries

Over half of the respondents indicated that they obtained their braille books mostly from regional libraries. Another 26 percent said they received half of their braille books from the libraries. Of the total number that used the regional libraries, 74 percent felt that the libraries' book services were adequate, and the remaining 36 percent viewed them as inadequate.

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Review

Your Eyes: A Book for Paramedical Personnel and the Lay Reader, by Thomas Chalkley, M.D. Springfield, IL: Charles C Thomas, 1974, 122p. $4.75

Reviewed by William T. Shults, M.D.

Dr. Thomas Chalkley, an assistant professor of ophthalmology at Northwestern University Medical School, has written this brief text "to fulfill the need for a simple, straightforward, uncomplicated book concerning your eyes." As the title suggests, it is aimed primarily at paramedical personnel, though the informed lay person can also profit from reading it.

The opening chapter reviews the anatomy of the eye in a simplified manner, drawing helpful analogies to a camera. The illustrations accompanying the text are generally beneficial; however, the diagram on page seven would mislead the uninitiated into thinking the eye is vertically ovoid instead of more nearly spherical.

Following the second chapter, which treats optics and refractive errors as well as visual acuity measurements, come a number of chapters dealing with the individual parts of the eye and the more common diseases which affect each. Separate chapters are devoted to the conjunctiva, cornea, lens, uveal tract, and retina. Glaucoma, strabismus, and neuro-ophthalmology are also concisely dealt with in easily understandable language. The ocular effects of systemic diseases such as diabetes and hypertension as well as the subject of eye injuries are covered in separate sections. The final chapter is devoted to commonly asked questions and I think will be useful to the reader toward whom this book is directed.

To enable the reader to check his grasp of the material presented, a series of study questions is appended to each chapter covering the salient points. As a large number of unfamiliar medical terms are introduced in the text, the author thoughtfully included a very complete glossary. It is unfortunate that a brief bibliography of standard reference books was not included for those who might wish to obtain more extensive information on any of the topics covered.

The author has succeeded in condensing a large volume of technical medical information into a readable and understandable form for his specific audience. The medical vocabulary introduced is large and would require some rereading for the medically naive, but the disease mechanisms are generally well and clearly presented and would answer the basic questions the reader might have about the disorders discussed. All of the common blinding diseases are dealt with in reasonable detail (e.g., cataract, glaucoma, uveitis, retinal detachment, macular degeneration, retrolental fibroplasia, rubella retinopathy, diabetes, and ocular injuries).

The book is particularly well suited for use as a guide for in-service training in agencies and schools for the blind and for vision courses in university special education and rehabilitation programs.

Dr. Shults is the chief resident and National Institutes of Health trainee in ophthalmology, John E. Weeks Institute for the Advancement of Ophthalmology, University of Oregon Medical School, Portland.

GIVE! Who Gets Your Charity Dollar? by Harvey Katz. Garden City, NY: Anchor Press/Doubleday, 1974. xi + 252p. $6.95.

Reviewed by H. H. Urrows

We Americans, the author says, "are a generous people. Each year we donate some $20 billion of our hard-earned money to charitable institutions. But what happens to our money? How much goes to the intended worthy cause and how much to glamorous and expensive fund-raising efforts, to highly paid staffs—and how much to outright fraud?"

"*GIVE!* tells us what the charity business is all about. It is the first book," asserts the publisher, "to give us contributors a clear picture of those charities that are well managed and free of fraud, and those that use our money unwisely or deceitfully. Much of what is in this book is shocking, but there is also much that is reassuring. In a lengthy 'Contributor's Guide' Katz tells us what to look for in choosing a charity and how to get the information we need to give intelligently. Included is a long listing of major and minor charities, with data about their operations, and concrete proposals for legislative changes in regulating charities."

In her critique of *GIVE!* in the November/December issue of *Foundation News*, Joan McC. Lundberg (editor of the American Association of Fund-Raising Counsel's annual *Giving USA)* noted that author Katz stated that he found Scott M. Cutlip's book *Fund Raising in the United States* (published by Rutgers in 1965) "particularly helpful." She pointed out that *Fund Raising's* 538 pages of text contains just 32 devoted to "the cheats in fund raising," while *GIVE!* devotes all but a few of its 242 pages to the "cheats." She says, rightly, that many of those cheats Cutlip wrote about are the same men Katz cites. She believes that in Katz's new book, "The scale is unbalanced and misleading, with writing superficial and limited, when compared with the earlier book."

I can't wholly agree. Katz's stated purpose is to protect the giving public. In trying to do that, being fair to fund-seeking agencies that are well worth support and to competent fund-raisers could surely be a secondary objective. There is room for and real need of as many books as can be printed and sold that will zero in on the frauds who victimize donors and make nearly all fund-raising appeals suspect among generous people who can't undertake to investigate them.

At first glance it looks as though Harvey Katz brought fine skills and seasoned, pertinent ex-

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perience to buttress his admirable motives. Sigma Delta Chi, the professional fraternity, had recognized his nascent stature with one of its awards for distinguished journalism. Like some other investigative reporters, he also received onerous, expensive, unwanted recognition in the form of a law suit brought against him by one of the persons whom he had accurately exposed. The seer Jeane Dixon sued him for $1 million in direct damages, $6 million in punitive damages, plus costs, after his 1973 article in the *Washington Post* showing how her Children to Children organization had taken in "well over $100,000" in peak years but used only a negligible part of contributed income for valid services; he reported, for example, that in 1969 Children to Children received $120,000 and spent $15,000 on "miscellaneous child care and education," with one beneficiary having been a 34-year-old opera singer given between $3,000 and $5,000 annually for singing lessons. When the Oklahoma state court dismissed the suit for lack of jurisdiction, Katz was relieved of the not inconsiderable expense of his legal defense even if the judgment was less satisfactorily vindicating than would have been just. In his 1972 book *Shadow on the Alamo,* he reported how two Freedoms Foundation award winners, Jack Cox and Will Wilson, were close business associates of the Houston swindler Frank Sharp, one of whose crimes was to accept and not repay $6 million from the Jesuit Fathers of Houston.

So much for this book's declared intentions and the writer's qualifications: one would think it has all the ingredients of a winner, a book that should not only sell well but merit the widest possible circulation in the highest public interest. It's sad that the printed result does not deliver on its promises, and that as investigative reporting the work is a dud. Because American philanthropy could benefit richly from a first-rate job—had this turned out to be excellent—let's examine how and why *GIVE!* is a disappointment.

The book's closest approach to the great tradition of cathartic muckraking is in its all too brief 19-page section on the Epilepsy Foundation of America. If the information sources are right, and their testimony has the ring of truth, this organization exemplifies what can happen if a less than responsible board permits program, staff, and budget to drift under the control of a wild man.

Years ago I was a consultant to the largest and most solvent agency in the epilepsy field. From November 1964 through July 1965 I saw how its former executive director—of the then Epilepsy Foundation, reorganized after a 1958 Congressional investigation of what had been the Federal Association for Epilepsy—had launched constructive programs. With able neurological advice the EF sought to gain acceptance for stabilized epileptics among industrial employers, to orient teachers and police on what to do when they encounter grand mal seizures, and to get archaic discriminatory laws modified. My job was done when I helped it find a new fund-raising director; he organized a national drive chaired by actor Jack Lemmon, but quit about the time the executive director did.

GIVE!'s picture of what the EF has become, since it merged with the National Epilepsy League to become the EFA, is a useful service. If and when validated, Katz's report can trigger appropriate internal reform or external intervention. The EFA could be open to prosecution under some state fund-raising laws. This portion of *GIVE!* depicts a classic example of how fund raising that lacks professionally expert program direction, and discipline from an actively conscientious board, can be terrible.

Why isn't the rest of the book of comparable quality? The remaining content is thin. It relies heavily on a few big-time frauds. Most of their stories are stale. Katz gets a lot of mileage from two 1958 Congressional investigations (of the Federal Association for Epilepsy and the Disabled American Veterans) and from former Minnesota Attorney General Mondale's 1960 inquiry into the Sister Kenny Foundation. After A. L. Koolish, Frank Sharp, and Patrick J. Gorman (of the United Police Fund and Friends of the FBI), he seems to run out of gas. These are sleazy, despicable men. They misuse the mails to prey on the unwitting. In spite of disclaimers *GIVE!* uses such fringe charlatans as a springboard to appraise the immense panorama of fund raising in the United States today.

When Katz takes on such larger targets as the American Red Cross and the National Foundation, he soon proves himself poorly equipped to find facts and make judgments. He spins his wheels with tirades against telethons and emotional mail appeals. It is too bad that the result—an angry tract—demonstrates the truth of Oscar Wilde's observation that sometimes, as you turn the pages, the suspense of the author becomes unbearable. Katz earns high marks for effort, but about C-minus for achievement, as he misses enormous opportunities to put U.S. fund raising into practical perspective.

In his quest for what newspapers used to call "the true facts" about fund-raising costs, Harvey Katz certainly tried hard. I like his on-foot approach more than Scott Cutlip's, which depended at his peril on secondary sources. Katz's account of his wild goose chase after financial data on local agencies through the District of Columbia area United Givers Fund, then the Council of Social Agencies, next the Internal Revenue Service, and later the State Department's Advisory Committee on Voluntary Foreign Aid before writing to more than 80 organizations for their annual reports is fraught with familiar pain.

Some part of his frustration is self-generated. I find very strange that he condescends to the National Information Bureau and the Council of Better Business Bureaus' solicitation review section. He writes that the NIB refused to admit him as a member and his repeated requests to discuss "its activities and the charity system" on the ground that "We are competitors, you might put us out of business." Study of 42 NIB reports given him by a friend causes him to conclude that in most of the cases he "would be unable to make an intelligent decision without first obtaining an annual report," but that "NIB membership seems worth the price" even though "it would be very unwise to contribute solely on the basis of the reports" he had seen. After an hour's interview with the manager of the Council of Better Business Bureaus' solicitation review section and her assistant, he writes that one of them "demonstrated the usual Bureau approach to consumer protection by dodging questions on atrocities committed by our 'reputable' charities (those with Better Business Bureau members on their boards). 'Well, they've had some problems,' was the usual reply." My experience has been that the NIB and CBB have always sent me any report I requested when they had made one.

More resourceful legwork could have led Katz to contributor information bureaus which exist in a number of large cities and to staffs of accreditation agencies who have become aware of fringe outfits on the marginal edge of fund-raising.

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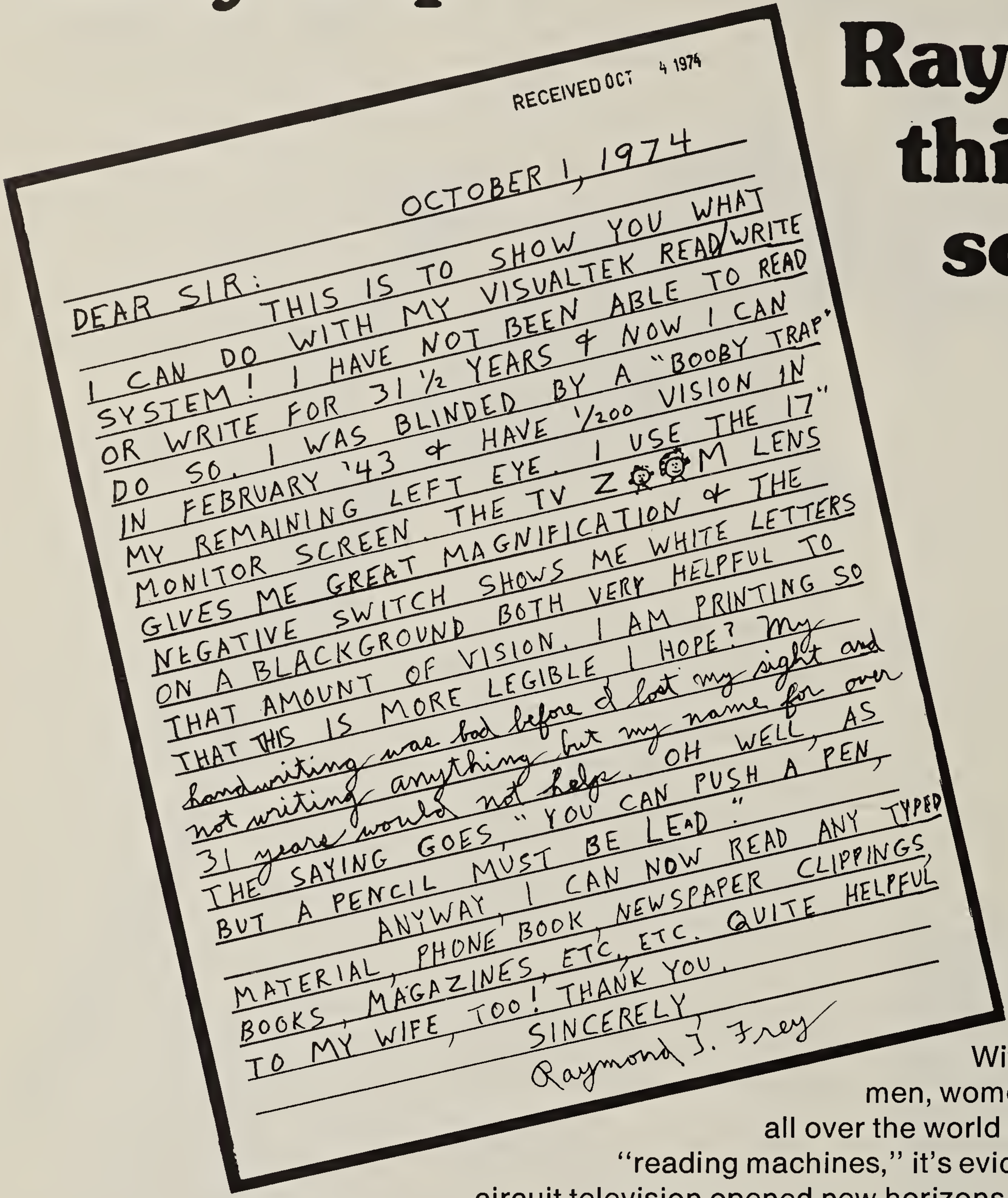

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His 17 pages of advice on how to read an annual report seems to me to exaggerate the manipulative skills of public relations people employed by philanthropic agencies when he warns that they "are experts in communications" and asks, "Would your annual report have been just as informative on a cheaper grade of paper or with fewer photographs of hungry or crippled children?"

GIVE! appears to equate nearly all fund-raising, public relations, and administrative costs with thievery. I have news for its author and the donors he badly wanted to inform. Fundraising is inexorably costing more, even in its lowest cost instances when well-briefed seekers succeed with face-to-face requests in getting very large gifts. Bona fide organizations should not be ashamed of this. To neglect adequate investment in fund raising can ensure disaster for program quality. As our economy gets rougher, it is taking more and more time on the part of those board and staff people who face up to their committed responsibilities, whether or not their time and out-of-pocket expenses are properly charged against fund raising. Had Katz penetrated below the surface of universities, research centers, and other organizations he never mentions, he could have rediscovered that it invariably costs money to raise it. He may think legitimate, non-lavish sales costs are escapable. They aren't. Failure is what is truly wasteful. Ineffective fund raising is the most costly kind.

His example of an organization's executive vice-president having a salary of $50,500, improved by the use of an AMX sports car at the agency's expense, is a flagrant example. Any impression that this is commonplace is wrong. I am certain that to get and to keep qualified and experienced administrators, fund raisers, and public education people, competitive salaries require no apology. The marketplace sets them. Paying out good money for poor returns usually turns out to be temporary.

I intensely dislike *GIVE!*'s associating by juxtaposition the dubious psychic Jeane Dixon with the late Basil O'Connor, president of both the National Foundation and the American Red Cross, with whom I worked when he was a brilliantly effective unpaid volunteer on a vitally needed public health education project and for whom I worked professionally as a writer-researcher. Katz's hindsight condemnation of O'Connor for spending $14 million on gamma globulin is based on ignorance. His taking O'Connor to task for Red Cross service to soldiers in peacetime is jejeune, innocent of judgments by able authorities that the early Cold War could have suddenly heated up, with pervasive demands.

Agencies for the blind come off lightly in *GIVE!* It says nice things, quite rightly, about Recording for the Blind. Both of the four-line précis on the American Foundation for the Blind and the American Foundation for Overseas Blind are almost innocuous. Had Katz been less cursory, he should have learned that AFB scrupulously reports income from sales of aids and appliances as such, as well as fees for service as a contractor to the Library of Congress on Talking Books.

The claim that "*GIVE!* tells what the charity business is all about" is dust-jacket hyperbole. Nevertheless, in spite of serious flaws, I hope that it sells and sells and sells. The sales might warrant its author a healthy advance royalty on his next book, permitting him to dig more deeply into program services that are the compelling sine qua non for ethically and triumphantly accountable fund raising. We can wish that scores of writers will get paying assignments to search further into what is still a regrettably unexamined but fascinating sector of American life. That fund raising is now in deep trouble is a relatively trivial matter when compared with the stubborn, unmet, real needs that are its reason for being.

Mr. Urrows heads H. & E. Urrows, a small, independent, and busy firm of funding, program, and editorial consultants. He has written two books, numerous articles, and many studies into ways of improving the net income of organizations.

Letters to the Editor

To the Editors:
I feel obliged to comment on Edward L. Glaser's letter (*New Outlook*, September 1974) in response to my article "The Practice of Guide Dog Mobility in the United Kingdom" (*New Outlook*, February 1974).

Perhaps Mr. Glaser is correct in stating that paternalistic attitudes within blind welfare still prevail in the U.K. This might well be a relic of the Victorian era that saw the origin of many voluntary organizations, when upper- and middle-class society was predisposed to offer "Christian Charity" to the poverty-stricken and the handicapped. The Guide Dogs for the Blind Association (GDBA), however, was very much a child of the twentieth century, having been established in 1931; established, indeed, from the same sources as The Seeing Eye: viz., the Fortunate Fields training kennels in Switzerland, under the auspices of Mrs. Dorothy Harrison Eustis.

But returning to Mr. Glaser's criticisms, it should be pointed out that while the feeding allowance is "admissable to all guide dog owners," the latter are nevertheless quite at liberty not to accept such a stipend. I did point out also in my article that, with regard to medi-

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cal check-ups for guide dogs, "only the veterinary examination is free"; drugs and subsequent treatment have to be paid for, although it remains true that some veterinarians do overlook these fees and, in a few cases, the GDBA is prepared to pay such charges.

Mr. Glaser seems to object to the provision for the newly graduated guide dog owner of home acclimatization in the hands of a skilled trainer. In actual fact, such after-care is usually provided only where a domiciliary environment might be unfamiliar to a blind person, or where major difficulties might be encountered, or where the capabilities of a guide dog owner are below average. Nonetheless, the GDBA does attempt, in its after-care service, to visit each graduate once a year.

With regard to the age-range of guide dog applicants being between 18 and 50 years, I did specifically point out that "older applicants are, however, carefully considered and often accepted for training," and, of course, no matter at what age, blind persons are trained with replacement dogs and given priority in this.

Turning to the signing of an agreement between the blind person and the GDBA, this measure is taken purely as a safeguard and the occasions when it has been acted on could be counted on the fingers of one hand. The agreement would be enforced only in extreme instances of cardinal misuse of the dog.

I agree that U.K. quarantine regulations render it difficult for guide dog owners to travel outside the British Isles, but the six-month obligatory quarantine period for incoming animals is necessary in order that the country may remain free of rabies (which is the situation at the moment), since the offending virus has an incubation period in the host of up to that length of time. With the prevalence of hydrophobia in Continental Europe on the increase, the necessity for such stringent quarantine will be appreciated.

Mr. Glaser speaks as a "person who is by no mean unbiased." I must confess to the same fault (if fault it could be termed) since I too am an out-and-out believer in the positive worth and intrinsic values of the dog as a means of mobility *par excellence*.

Howard Robson
Carlisle, England

To the Editors:

Mr. Glaser's letter in your September 1974 issue raises criticisms of the policies of the Guide Dogs for the Blind Association (GDBA) which, for mutual understanding, should be answered.

Perhaps I might point out that while Mr. Robson, whose article in your February 1974 issue prompted Mr. Glaser's letter, graduated as an instructor in this organization, he resigned from its service in 1969, and his article is a personal statement and not one authorized or approved by GDBA.

We are always delighted to have opinions from guide dog users and pay particular heed to the views expressed. Mr. Glaser's observation that subtle differences exist between the USA and UK is the key to the matters he raised. Having examined closely the practices and attitudes in guide dog circles across the United States, we feel the differences, though subtle, are not just important, but highly significant. It is not for me to presume to comment on what may or may not be ideal for the USA, but it is proper for me to observe that the whole fabric of social attitude and economic structure in the UK is deeply different.

The emphasis in GDBA is to remove as many obstacles as we can from the path of the potential guide dog owner, so that as many people as possible can be helped via mobility to the fullest degree of integration with the majority main-stream of life around them. This is practical, pragmatical help and is not in any sense paternalism. As people become more integrated and economically established, they have the option open to any free citizen to contribute through normal donation channels to work for others. But we in GDBA would think we were failing in our duty if anyone should be inhibited by financial uncertainty from obtaining the means to establish himself as a self-reliant and independent member of society.

This, then, is the key to our attitude — not paternalism, but a brotherly helping hand at the critical points of need, which finds its realization in some of the things which Mr. Glaser finds unacceptable. Our traffic legislation, for example, does not in practice provide the protection of the pedestrian that one has observed in the legislation of most of the United States. Neither are our cities laid out on rectangular block patterns, which introduce a degree of basic similarity to most American and many continental European cities. Experienced American instructors have readily appreciated the need for help in the home town in our conditions. Some have envied our good fortune that our country is small by comparison, our four schools are strategically distributed, and our users are rarely more than 100 to 150 miles from the school at which they trained and in which they trained and in which their own instructor is resident.

Mr. Glaser also refers to the repossession clause in our agreement with the guide dog owner. This is only very occasionally operated — but it does enable the Association to withdraw a dog should the unit become unsafe, or should the dog be maltreated or neglected. British public opinion holds organizations such as ours responsible for such things and, against this background, some such provision is necessary to facilitate protection for the majority against a microscopically small minority. It does not appear to bother that vast majority, who in fact are pleased rather than otherwise, that a mechanism exists to protect their collective integrity. We have our own esprit de corps.

In short, in our country, the blind as well as the sighted, carry the full spectrum of human kind, from helpless and incapable through average, to outstandingly capable and brilliant. As a society, we do not think it too much to ask of the capable and brilliant to accept certain help without question, so that the less well endowed may also accept that that help without question — question that would damage their self-esteem and hinder their progress to a full, independent, happy and normal life.

A. R. Clark
Director General
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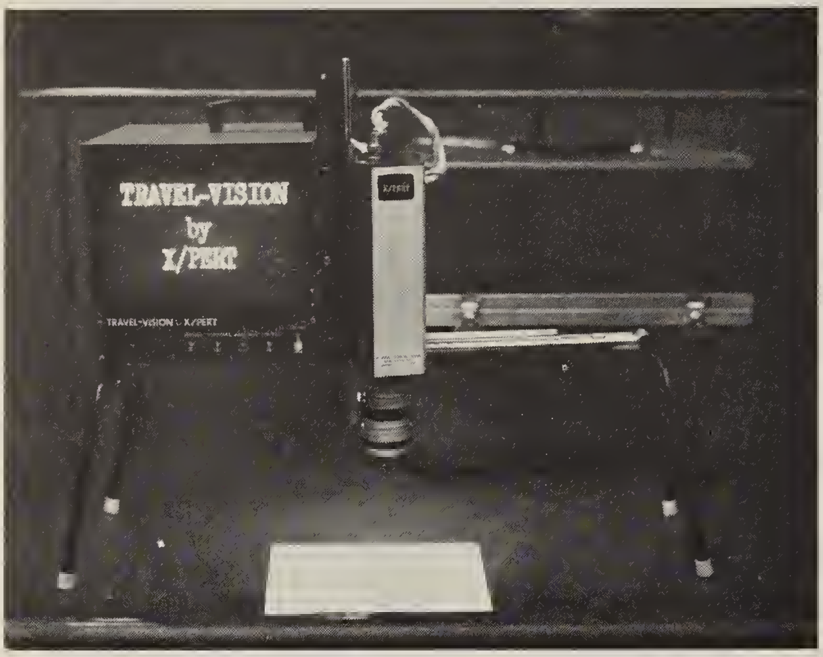

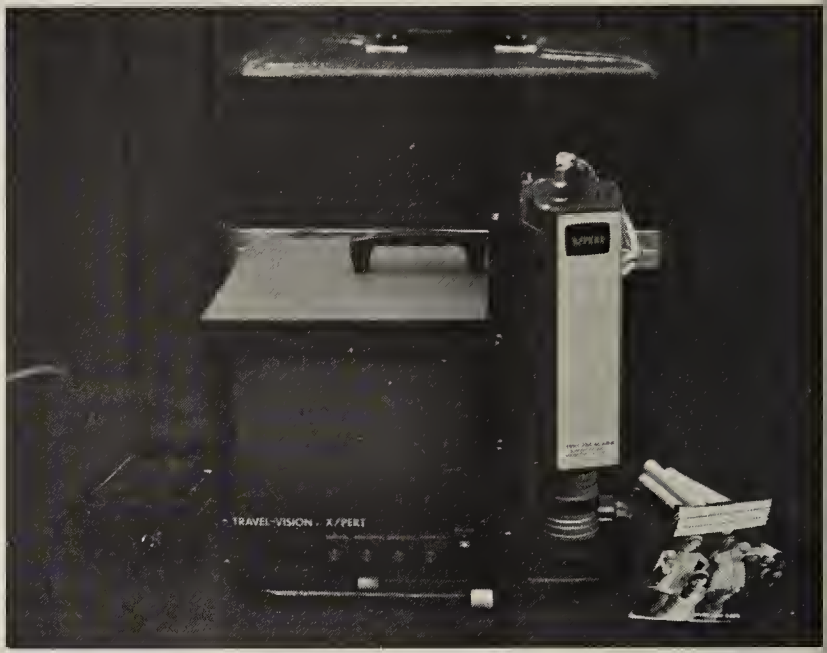

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Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Mary Maie Richardson, head librarian.

How Can I Make What I Cannot See? by Shiro Fukurai, translated by Margaret Haas and Fusako Kobayashi. Photographs by Kenji Ishiguro. Van Nostrand Reinhold Company (450 West 33rd Street, New York, NY 10001), 1974, 127p. $5.95.The author teaches art at the Kobe Municipal School for the Blind in Japan. The last section in the book records conversations of his students and analyzes specific works using the students' own comments and giving diagrams of the sculptures.

Technology and the Neurologically Handicapped (the proceedings of a conference co-sponsored by the United Cerebral Palsy Research Foundation and the National Aeronautics and Space Administration, held at NASA Ames Research Center, Moffett Field, California, September 8 to 10, 1971). Moffett Field, CA: NASA Ames Research Center, December 1973, iv + 281p., illus. $2.00. (Order from: United Cerebral Palsy Foundation, 66 East 34th Street, New York, NY 10016.) Three chapters are of special interest to those concerned with blindness: "Neural Control: Long-Range Prospects," by Terry Hambrecht, pp. 39-44; "Blindness," by Robert H. Pudenz, pp. 93-106; and "Artificial Sensory Systems," by James C. Bliss, pp. 141-149.

Debby, by Deborah Zook. Herald Press (616 Walnut Avenue, Scottdale, PA 15683), 1974, 128 p. $3.95. Autobiography of a young blind teacher who lost her sight early in her college years.

Instruction in Physical Orientation and Independent Mobility: A Lesson Plan Outline. The Industrial Home for the Blind (57 Willoughby Street, Brooklyn, NY 11201), 1973, 51p. $2.50. Revised edition of an instruction manual based on the techniques developed by Dr. Richard E. Hoover during his work with blinded servicemen of World War II. The original edition was published in 1960.

My Religion, by Helen Keller. The Swedenborg Foundation, Inc. (123 East 23rd Street, New York, NY 10010), 1974, 126p., illus. $1.25. A new paperback edition of the book originally published by Doubleday and Company, Inc. in 1927.

CCTV—How Good a Visual Aid Is It? *Medical World News* (1221 Avenue of the Americas, New York, NY 10020), Vol. 15, No. 41, December 6, 1974, pp. 42F, 42I. Brief report on several interviews with ophthalmologists and manufacturers concerning the value of closed-circuit TV as a reading aid for low-vision patients.

Blind Date With New Zealand, by David Scott Blackhall. *The Chronicle* (Royal New Zealand Foundation for the Blind, Private Bag, Newmarket, Auckland, New Zealand), Vol. 11, No. 17, August 1974, pp. 11-15. Personal reminiscences of the originator of "In Touch," the B.B.C. special radio magazine for blind listeners in Britain.

An Evaluation of the Silva Braille Compass: 2 - Field Trials, by Grahame James, Dennys Campbell, and John Armstrong. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 58, No. 690, October 1974, pp. 253-255. The authors are members of the Blind Mobility Research Unit, Department of Psychology, University of Nottingham in England. The first part of their research report (listed last month) appeared in the September 1974 issue of *The New Beacon.*

Multiply Handicapped, Partially Sighted Children's Capability for Resolving Visual Images, by Bernard Z. Friedlander, Dennis A. Silva, and Marcia S. Knight. *Exceptional Children* (The Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091), Vol. 41, No. 2, October 1974, pp. 121-123. Brief report on a research project conducted with 20 deaf-blind, severely retarded children. The authors were testing the effectiveness of a method of assessing visual acuity.

Additional Listings

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Agency Administration

The Management Tactician: Executive Tactics for Getting Results, by Edward C. Schleh. McGraw-Hill Book Company (1221 Avenue of the Americas, New York, NY 10020), 1974, $10.95. "Precise, workable solutions to such basic operational problems as organization, delegation, information systems, policy, procedure, and staff-line relationships are described and illustrated through extensive examples from actual business situations . . . ."

Supervision: The Key to Good Management, by Alfred W. Good. *Journal of Rehabilitation* (National Rehabilitation Association, 1522 K Street, N.W., Washington, DC 20005), Vol. 40, No. 6, November-December 1974, pp. 13-14, 30-31, 42. A detailed discussion of the various types of leaders and the key ingredients in the "best" leadership style, including many useful pointers on being an effective supervisor.

Anthologies

Eleventh Annual Distinguished Lecture Series in Special Education and Rehabilitation, edited by Barbara C. Ring and Donald R.

Schrader. Department of Special Education, School of Education, University of Southern California (order from University Bookstore, U.S.C., Los Angeles, CA 90007), 1973, 101p., $3.00. Contents: "Special Education and the Minority Child," by Reginald L. Jones; "The Emotional Considerations in the Teaching of Children With Learning Disabilities," by Belle Dubnoff; "Famous Persons Who Have Been Handicapped: A Critical Analysis," by Harry J. Baker; "Rehabilitation: Revolution or Regression," by Seymour Kolko; "Rehabilitation and Poverty," by Martin Acker; "Development of Competencies," by Mary Reilly; and "Dynamics of Substance, Abuse and Management," by Vernelle Fox.

Career Education

Career Education in the Secondary Schools, by Betty P. Flaherty and Roland A. Dwinell. Educational Properties Inc. (P.O. Box DX, Irvine, CA 92664), $11.50. This is a "highly comprehensive book designed to guide administrators, teachers, counselors, and directors of career education in developing a career education program for the secondary level."

Career Education: A Proposal for Reform, by Sidney P. Marland, Jr. McGraw-Hill Book Company (1221 Avenue of the Americas, New York, NY 10020), 1975, $7.95. Written by the former commissioner of the U.S. Office of Education and assistant secretary of education and now president of the College Entrance Examination Board, this book covers "the ways in which career education seeks to make schooling more relevant for children, young people, and adults. It describes the system's current impact on schools, colleges, vocational institutes, and businesses, and explores its potential for revitalizing the nation's learning curricula."

Education

Some Thoughts on Mainstreaming, by Edwin W. Martin. *Exceptional Children* (Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091), Vol. 41, No. 3, November 1974, pp. 150-153. Remarks on the integration of handicapped with nonhandicapped children made by the deputy commissioner for education of the handicapped at the 1974 convention of the C.E.C.

Films

Help Smart. A ten-minute, color, slide film presentation with coordinated cassette-tape audio. Produced primarily for service clubs. Develops the idea of "Help the blind help themselves—through working with your local social service agency." Free preview copies are available. Purchase price, $30.00 from the Greater Detroit Society for the Blind, 1401 Ash Street, Detroit, MI 48208. For use in Automatic Projectors only.

Pamphlets

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a year; $3.75 annual subscription. This newsletter is published by the producers of the children's television show "Mister Rogers' Neighborhood," for families with young children. It looks at the world from a growing child's perspective and provides useful pointers in answering children's questions about such "mysteries" as television, music, growing up, love, anger, fear, and so on. The November 1974 issue, for example, dealt with the problem of physical handicaps, how they can be explained to young children, and how to allay fears they might have regarding their own bodies. Useful for parents and for those who work with them and their children.

Career Education Digest (Educational Properties Inc., P.O. Box DX, Irvine, CA 92664), monthly; one year, $7.50; two years, $12.50. Provides information on current research, evaluation, curriculum, cost studies, and other developments in career education. A special feature is a listing of current and new materials, from books and pamphlets to films.

Polling Magazine (United Cerebral Palsy of New York City, 122 East 23rd Street, New York, NY 10010). This new newsletter is aimed at the cerebral palsied consumer of services; its articles and features are focussed on their concerns and include news, reprints of significant articles, abstracts, and tips on services and the political power of handicapped persons.

Counsumer News (Office of Consumer Affairs, U.S. Department of Health, Education, and Welfare; subscriptions from Superintendent of Documents, Government Printing Office, Washington, DC 20402), twice a month; one year, $4.00. A newsletter reporting on federal programs for consumers.

Preschool Education

Placing Handicapped Children in Head Start Programs, by Jenny W. Klein and Linda A. Randolph. *Children Today* (Children's Bureau, U.S. Department of Health, Education, and Welfare; available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402), Vol. 3, No. 6, November-December 1974, pp. 7-10, 36. An appraisal of the first two years of federally mandated enrollment of handicapped children in Head Start programs by the director of educational services and the director of health services, Division of Program Development, U.S. Office of Child Development.

Head Start for the Handicapped—What's Been Accomplished? by Jean Nazzaro. *Exceptional Children* (Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091), Vol. 41, No. 2, October 1974, pp. 103-106. An independent review of reports on the involvement of handicapped children in Head Start programs by a C.E.C. Information Center staff member.

News in Brief

- Blind consumers, particularly those suggested by national organizations of the blind, have been guaranteed increased involvement in the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped (NAC). At a special meeting of NAC members in November, a number of actions designed to increase participation in NAC by blind consumers were taken. The actions were:

1. At least one-third of NAC's directors elected each year will be persons who are members of or recommended by national organizations of blind or other visually handicapped persons. (The Board activated this the same day by declaring that seven vacancies existed, bringing the Board to its maximum size of 35 members.)

2. The Commissions on Standards and Accreditation were directed to review their policies and procedures in light of the principle of consumer participation and report their recommendations at the next Board meeting.

3. The next Board meeting will be held within four rather than six months. Election of new Board members and recommendations of the Commissions will be the major items of business at the accelerated meeting.

4. As a matter of policy, the Nominations Committee will notify national organizations of the blind and visually handicapped of Board vacancies and request their suggestions for candidates. The same policy will apply to candidates for vacancies on the Commissions.

5. A revised personnel statement spelled out NAC's commitment to affirmative action in recruitment, placement, and promotion of qualified visually handicapped persons, as well as others covered by equal opportunity provisions.

6. A long-range plan, providing for increased emphasis on working with consumer organizations, was approved.

- A new recorded magazine, *Life and Health,* will begin publication in April. For more information, write Richard J. Kaiser, editor, Christian Record Braille Foundation, Inc., P.O. Box 6097, Lincoln, NE 68506.

- Camp Wiki Waki, sponsored by the Northwest Georgia Girl Scout Council, Inc., integrates blind and deaf children with nonhandicapped campers in all its programs. Persons interested in participating, either as campers or as counselors, should contact the Council at 40 16th Street, N.W., Atlanta, GA 30309.

- Free print, soundsheet, and braille copies of the Hadley School general information bulletin are available on request to the School at 700 Elm Street, Winnetka, IL 60093.

- A four-language questionnaire is being circulated as part of a world-wide survey conducted by the Deaf-Blind Committee of the World Council for the Welfare of the Blind. Copies of the questionnaire are available from Dr. Edward J. Waterhouse, Perkins School for the Blind, Watertown, MA 02172.

- The proposed revisions of the National Accreditation Council (NAC) standards for vocational services are available from NAC for 75 cents to cover postage and handling. Write NAC, 79 Madison Avenue, New York, NY 10016.

- The Binaural Sensory Aid (the Kay device) is now being distributed in the United States by Telesensory Systems, Inc., 1889 Page Mill Road, Palo Alto, CA 94304.

- Indiana University, Bloomington, is setting up a Special Office for Materials Distribution to facilitate the efficient distribution of teaching materials for the handicapped. The Office is being established under a three-year contract with the U.S. Office of Education's Bureau for Education for the Handicapped.

- Visually handicapped parents in the New York metropolitan area have established an organization to exchange ideas, experiences, etc. For more information, write Mrs. Ann Cataldo, 65-65 Wetherole Street, Rego Park, NY 11374.

- The U.S. General Accounting Office report on the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped is now available. Individual copies may be obtained from the USGAO, DHEW, 330 C Street, S.W., Room 1126 South Building, Washington, DC 20201.

- Information about white cane tours for 1975 and 1976 is available from Evergreen Travel Service, 19429 44th West, Lynwood, WA 98036.

Appointments

- Massachusetts College of Optometry Visual Rehabilitative Clinic: **Gerald Friedman, O.D.,** director.
- Cleveland Eye Bank: **Frank Treco,** president, board of trustees.
- The Lighthouse, New York Association for the Blind: **Kenneth E. Phillips,** director of recreation and cultural services.

Retirements

- Community Services for the Blind, Seattle: **Charles E. Brown,** director.

Deaths

- **Robert S. Bray,** former chief, Library of Congress Division for the Blind and Physically Handicapped, from 1957 to 1972, in Sanibel, FL, on November 26, 1974.

Elections

- Montana State House of Representatives: **Budd Gould,** Missoula. Mr. Gould is totally blind.

Coming Events

March 10-13 National Conference on Radio Reading Services for Blind and Physically Handicapped Persons, American Foundation for the Blind, Oklahoma City.

March 20-21 National Conference of Rural Health, Roanoke, VA.

April 16-17 American Geriatrics Society, 32nd Annual Meeting, Miami Beach.

April 20-26 Council for Exceptional Children, 53rd Annual International Convention, Los Angeles.

April 24-29 Association for Research in Vision and Ophthalmology, Annual Meeting, Sarasota, FL.

May 5-8 National Braille Association, 13th National Conference, Milwaukee.

May 11-14 National Conference on Social Welfare, 102nd Annual Forum and Exhibits, San Francisco.

June 15-19 American Medical Association, 124th Annual Meeting, Atlantic City, NJ.

June 15-21 American Physical Therapy Association, Anaheim, CA.

June 18-20 Association for Education of the Visually Handicapped, North Central Region, Madison, WI.

June 21-22 International Federation on Ageing, Third Conference, Jerusalem.

June 22-27 Tenth International Congress of Gerontology, Jerusalem.

June 29-July 3 International Congress of Biomechanics, Jyvaskyla, Finland.

July 20-23 American Association of Workers for the Blind, Biennial Meeting, Atlanta.

August 7-9 Association for Education of the Visually Handicapped, South Central Region, Little Rock.

September 21-25 American Academy of Ophthalmology and Otolaryngology, Dallas.

September 24-28 American Academy for Cerebral Palsy, New Orleans.

September 26-27 Association for Education of the Visually Handicapped, Middle Atlantic Region, Wilmington, DE.

Intensive Behavior Modification Workshops
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March 26-29 New York
April 9-12 Cleveland
May 7-10 Boston
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Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display—$13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, 15 West 16th Street, New York, N.Y. 10011.

AIDS AND APPLIANCES

Aud-a-Reader. Battery-AC disc player for 8-1/3 and 16-2/3 rpm. $40.00. SFB Products, Bala-Cynwyd, Pa. 19004.

Instruments, Recreation Equip. Sound or print catalog. Science for the Blind Products, Bala-Cynwyd, Pa. 19004.

CATALOGS

Optacon Catalog—products and services—a complete listing of Optacon Systems, Accessories, Training Course, and Training Material prices. Products are also pictured and described in detail. Write Telesensory Systems, Inc., 1889 Page Mill Road, Palo Alto, California 94304.

Aud-a-log, new 90-min. soundsheet catalog (8-1/3 rpm) of instruments for blind and visually limited. Free. SFB Products, 221 Rock Hill Rd., Bala-Cynwyd, Pa. 19004.

PERSONNEL

Situations Available

Blind Rehabilitation Teacher. The Department of Special Education at Northern Illinois University is in the process of recruiting an AAWB-certified blind rehabilitation teacher with a master's degree and three years experience in blind rehabilitation teaching to coordinate and teach courses in home teaching at the graduate level. This position carries a rank of associate professor with a competitive salary. Interested persons should contact Larry Hapeman, Ph.D., Coordinator, Programs for the Visually Handicapped, Department of Special Education, Northern Illinois University, Dekalb, IL 60115.

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THE NEW Outlook FOR THE BLIND

April 1975 Volume 69 Number 4

Group Work With Aged Blind Japanese Americans

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Tactile and Visual Reading

BARRY E. HAMPSHIRE, M.Sc.

Mr. Hampshire is with the Department of Psychology, University of Manchester, England.

ABSTRACT: Based on a review of the literature on reading, including the details of its information processing aspects and the role of the sensory register, short-term memory, and long-term memory, it is concluded that both visual and tactile reading involve the same basic processes. Taking into account what is known about visual reading and the results of recent experiments on the sense of touch, it is suggested that certain simplifications in the braille code and changes in the mode of presentation (dynamic-rhythmic rather than spatial) would considerably improve the efficiency of braille reading.

Introduction

One commonly hears or reads about the superiority of vision over touch: that the eye is orders of magnitude more sensitive, greater in its capacity to deal with incoming information, more discriminating. Although these comparisons are not completely erroneous, such gross and biased comparisons conceal more than they reveal about these two senses. Recent research (e.g., Melzack & Wall, 1962) has shown that the mechanisms of cutaneous discrimination involve a complex and elaborate system that not only incorporates a "sense organ" linked to the brain, but also a sophisticated intermediate system of analyzers and filters that refine the signal before it arrives in the brain. Cutaneous discrimination has its own characteristics, its own strengths and weaknesses; in other words, it is specialized in favor of certain types of stimuli in the same way that the visual system is. For example, many braille readers commonly make discriminations of 0.001 of an inch between the heights of braille dots, a difference few people could detect with their unaided eye.

Dynamic aspects of touch

Another important aspect of the tactile sense is that it is dynamic; that is, it is adaptable to the functional demands made on it. In most people who have good vision, it is redundant to develop fine discrimination using their tactile sense, and this probably plays a large role in the poor performance of most persons' tactile capabilities compared to that of their visual sense, a sense modality in almost constant use. Obviously, ability to make fine discriminations using the tactile sense is of major importance to someone who is born blind. The young child who is congenitally blind has to be taught to develop his cutaneous senses, in the same way that a sighted child is taught how to use his vision.

Developing the sense of touch

However, the blind child is not easily distracted by objects around him, as is a sighted child, nor is it so easy to encourage him to explore his surroundings. As a result, young blind children are often left to be passive receivers of whatever happens to come their way—usually very little—instead of engaging in the active exploration and experimentation that is necessary for the full development of their senses. What I am implying is that the sense of touch is a modality that is sufficently elaborate and sophisticated that, *given* *enough chance and encouragement to develop*, could make very significant increases in the capabilities of blind people. Furthermore, this development is closely tied to language and cognitive development and, therefore, to reading.

An important aspect of tactile discrimination is using stimuli that optimize the characteristics of that particular system. It will be argued that reading is primarily a cognitive process and that the cognitive processes involved in reading are essentially the same whether the incoming information is from the tactile or the visual modality. Optimizing the stimulus characteristics, therefore, is important, and the extent to which this can be achieved will reflect largely on how efficiently and rapidly reading can take place.

Tactile Information Processing

☐ In recent years, with the upsurge in interest in communication, there have been a number of investigations exploring man's "tactual literacy," notably by Geldard (1957, 1960), Bliss et al. (1966a, b, c; 1969), and Hill and Bliss (1968). However, our knowledge of the way we process tactual information is still very limited compared to our knowledge of visual information processing, and that is still far from complete.

Basic research

The work of most direct relevance to this subject is that of Bliss and his co-workers at the Stanford Research Institute. Their investigations were toward the development of a direct-access reading machine for blind persons (i.e., the Optacon) and, therefore, concerned with the processes that underlie reading and tactile reading in particular. Much of their basic research on tactile information processing was derived from experimental work investigating visual information processing. I think, therefore, it would be useful to outline briefly some of the work on the visual system first so that the performance of the tactile system can be seen in comparison.

The Three Stages of Memory

☐ A good deal of research has gone into developing models of visual information processing, much of which has been used in models of the reading process. Basically, it is hypothesized that the memory system is divided into three stages: a sensory register, a short-term memory, and a long-term memory. The sensory register has a capacity several times greater (perhaps infinite) than the short-term memory, which has a capacity of about four or five items. Also, the information in this sensory register decays within one or two seconds. From this sensory register the information is coded into the short-term memory. This short-term memory will contain both abstractions of the visual input, in order to eliminate minor variations that interfere with matching, and a verbal coding of the input. The exact nature of this visual abstraction and verbal coding is still being argued about. The short-term memory is the "working" memory since it manipulates and compares material, which it either discards or recodes into meaning at a highly abstracted level. This reorganized material is then "stored" in the long-term memory (Mackworth, 1972).

Experiments

Bliss and his co-workers (1966a, b, c; 1969) have carried out a series of experiments to find out whether a similar memory/information processing system exists for tactile information. They used the same techniques as had been used in several similar visual investigations, the tactile space (corresponding to the visual field of view in the visual experiments) being the 24 interjoint regions on the palm side of the fingers of both hands. Each phalanx, which is labelled with a letter, could individually be stimulated with an air-jet. Very briefly, the experiments consisted of N phalanxes (N less than 24) being stimulated and the subject either being asked to report all stimulus positions or just those stimuli which occur in certain regions, such as the tips of the fingers, on the right-hand only, etc. This reporting area is not indicated to the subject until after the stimuli have been presented. The idea behind this technique is that if N stimuli are presented and, after an interval, only those in a certain region are asked to be reported, then all those N stimuli have to be "recorded" by the sensory register since the subject does not know beforehand which ones he has to report. By adjusting the length of the interval between the stimulus and the response region cue, the decay time of the sensory register could also be determined.

Results

From the results of the former "whole report" experiments, the span of the short-term memory was about four stimulus positions out of 12. These were from four sighted subjects and one late blind subject. An early blind subject was also used, and his immediate tactile memory was almost eight positions out of 12 (Bliss & Crane, 1969). The "partial report" experiments indicated that a tactile sensory register indeed exists and is analogous to the visual sensory register; i.e., it has a very large, perhaps infinite, capacity and an information decay rate of about two-thirds in just over a second.

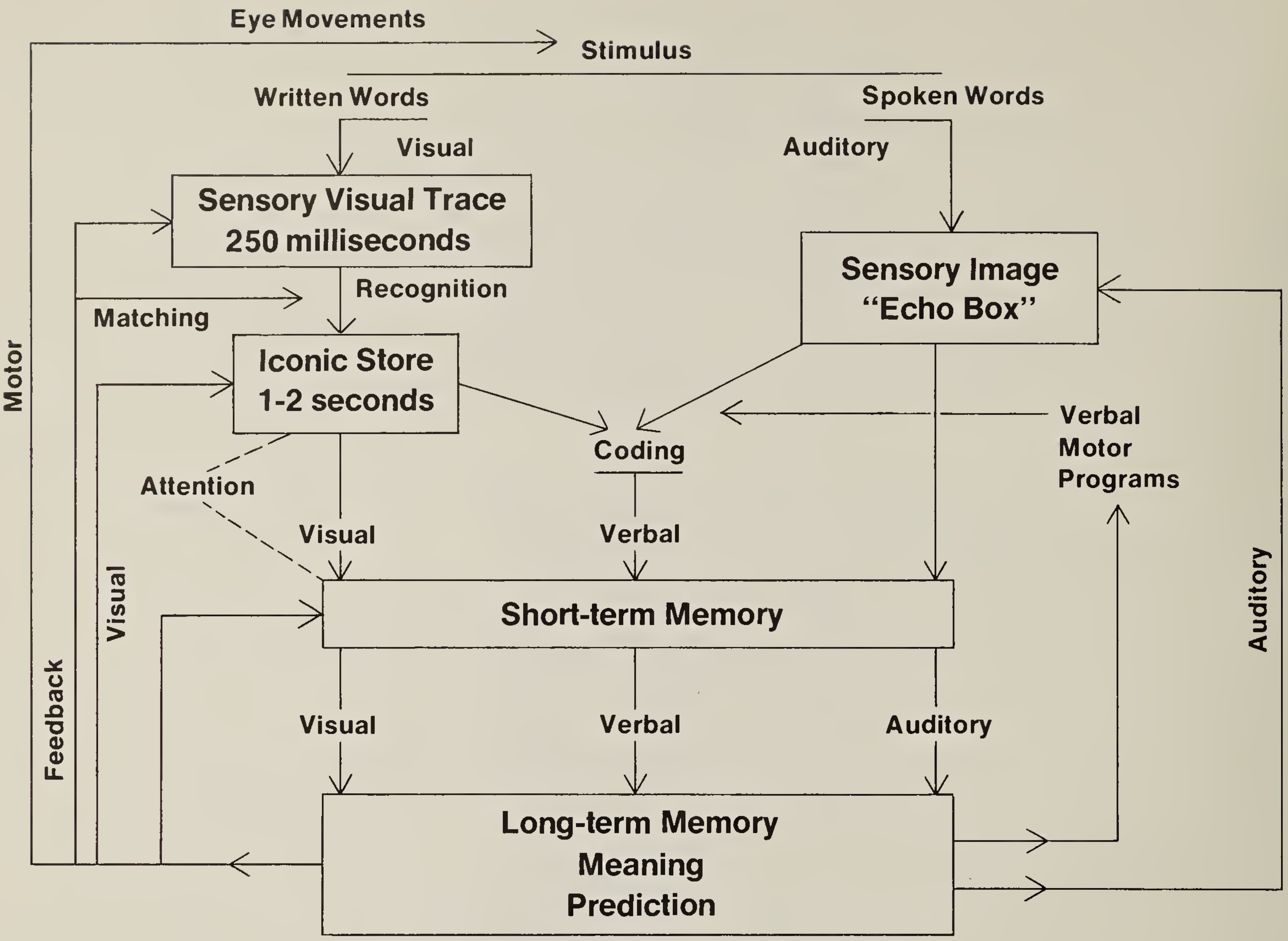
Conclusions

The result of the early blind subject is interesting (especially in view of the almost legendary memory of the blind), but, as Bliss et al. (1966) point out " . . . the reader is cautioned that the effect of long-term tactile training is not yet known. When visual data are compared with tactile data, the comparison is between results from a highly trained modality and those from a generally poorly trained modality." However, perhaps this result gives an indication of the capabilities of the tactile sense when this training discrepancy is not present.

The results of these studies carried out by Bliss and his associates and by others (e.g., Foulke & Warm, 1968) suggest that information is processed in essentially the same way, independently of whether the incoming information is visual or tactile. Any difference in performance between visual and tactile reading, therefore, is likely to be largely due to the non-optimum presentation of stimuli to the sense organs, rather than any "inferiority" of the processing capabilities of that sensory system.

Reading Models

☐ Although the amount of literature on the reading process is small compared to that on how to teach reading (a somewhat paradoxical situation), there is still a considerable number of hypothesized models of reading or reading processes. A recent review of reading models produced 77 distinct models (Geyer, 1972). It is beyond the scope and purpose of this paper to consider this complex area in any detail; however, one of the most comprehensive and recent models of the reading process is that of J. Mackworth (1972). Of this model, Geyer (1972) states that it represents "undoubtedly the current consensus of expert opinion in a number of fields concerning the identification and operational characteristics of the information processing systems



involved in reading." I shall, therefore, briefly outline this model in order to demonstrate the relevance of the data in the previous section to reading, and to give an idea of the "expert opinion" to which Geyer refers.

The verbal code

Mackworth (1972) defines the process of reading as "coding visual symbols into a verbal code that has already been learned. Meaning is inherent in the verbal code." She sees reading as the third and final stage of a sequence beginning with the child getting meaning from the input from his senses. At this stage, the child learns the temporal sequence of events from what has gone before. These play an important part in reading. The next stage comes with the child learning the verbal spoken code with which he can record and organize his sensations. Thus, reading involves a synthesis of sensory data and the verbal code, together with visual (or tactile) symbols.

Input in reading

In visual reading, the input occurs during the brief fixational pause of the eye. This input, Mackworth maintains, is an active process involving selection, attention, expectancy, and prediction Schiffman (1972) has suggested that the peripheral retina plays quite a large role in this initial selection and control of visual input. Interestingly, he also suggests that the activity of the non-reading hand in braille reading (when both hands are used) is a haptic analogue of the peripheral retina, and has the function of allowing reading to proceed faster by providing the reader with information about the various redundancies in the text, such as context, idiom, etc., which allow the reader to make more predictions during reading.

Processing

The initial visual sensory trace lasts about 250 milliseconds, which is about the duration of the fixational pause for the skilled reader. The information is then processed visually and fed into the short-term memory. The processing of the original input is probably matching with a stored pattern; Mackworth (1972) maintains that "all levels of storage are found, from the individual letters through spelling patterns, to words and common phrases." Presumably, the level used depends on the nature of the text and the level of skill of the reader, and is usually automatic, since experiments have shown (Doost & Turvey, 1971) that the initial input and the matching process do not require attention in the skilled reader.

The Sensory Register

☐ The sensory register has a relatively large capacity and retains input for about one or two seconds. Thus, it contains several inputs from the initial sensory trace simultaneously. It is thought that this smooths out the effect of several discrete visual inputs (Mackworth, 1972). Experiments using visual (Sperling, 1960) and tactile (Bliss et al., 1966) stimuli have shown that this sensory register decays within one or two seconds, yet four or five items can be named. To name four or five items takes considerably longer than one or two seconds, so information must be quickly transferred to another, more permanent form of memory (Neisser, 1967). This new form of memory is the short-term memory.

Constant feedback

Retention of material in this store, which will also contain abstractions of the visual input as well as the verbal code, does require attention (Mackworth, 1972). It is within this store that material is either discarded or recoded into meaning at a highly abstract level and then transferred to the long-term memory. Whether this information is permanently stored in the long-term memory, or whether it only reorganizes and changes it, is not yet known. There is constant feedback from the long-term memory to all stages of the input, which helps to facilitate recognition and coding at the various levels.

Braille Reading

☐ Most of our knowledge about the processes involved with braille reading originate from a series of studies carried out by Nolan and Kederis (1969) at the American Printing House for the Blind. This research is now well known and, therefore, only a brief outline of their findings will be given here. The model of braille reading that they propose is a "sequential-integrative" one. That is, "that 'whole-word' reading is not characteristic of the braille readers studied and that the perceptual unit in word recognition is the braille cell." The evidence for this is that they found that the time taken to recognize braille words was greater than the time calculated by summing the recognition times of the individual characters. The opposite effect, i.e., word-recognition times being less than the synthetic recognition times of the letters comprising that word, is found in corresponding visual experiments. This extra time in recognizing braille words was believed to be spent "integrating the information derived from the recognition of the individual characters" (Nolan & Kederis, 1969). This extra recognition time varied from 50 to 150 percent of the synthetic recognition time. The amount of extra time required to recognize a word seemed to be inversely related to the familiarity of the word, and to whether the word was contracted or uncontracted. These are not simple effects, however, as they are confounded by each other and by other variables, such as word length and the ability of the reader.

Defining reading

Before going on to compare visual and tactile reading in more detail in the light of what has been said above, I think it would be useful to clarify what is meant by "reading" in this paper. There is no one accepted definition of reading, and it is probably true to say that there are as many definitions of what reading is as there are theories and models of how it is done. I have already mentioned Mackworth's (1972) definition, the main emphasis being that "reading involves almost all the brain functions, sensory, motor, motivation, attention, expectancies, cognitive, and all kinds of memory." It is the complexity and virtual all-inclusiveness of reading that I wish to emphasize here. As such, reading ceases to be primarily a visual or a tactile skill.

Tactile and Visual Reading

☐ If we look at reading, then, in its complex, global sense, there are many more points of similarity between visual and tactile reading than are usually recognized. We saw above, in the section on information processing, that the basic memory processes are essentially the same whether the incoming information is visual or tactile and, in Mackworth's model of the reading process, how important these various memories and their characteristics are for reading. Also, experiments on the effects of pronounceable versus unpronounceable pseudowords on reading (Gibson et al., 1962; Pick, Thomas, & Pick, 1966) show that these are the same whether subjects read print or braille. I think it reasonable to assume, therefore, that the observed differences in print and braille reading are not fundamental and must be more a function of the compatability between the stimulus and sense channel used, these being the only areas of real departure between the two modes of reading.

There are two factors here that could affect the efficiency of this match: first, the capabilities or capacity of that particular channel and, second, the type of stimulation that the sense organs of that particular channel is required to mediate. Let us consider the first factor, the capacity of the visual and tactile channels.

Channel Capacity

☐ One study (Troxel, 1967) considers this question directly by comparing visual and tactile reading in controlled modes of presentation. In his study, Troxel measured visual reading speeds for letter-by-letter and word-by-word presentations. Then he measured tactile reading rates for letter-by-letter presentations and also word-at-a-time presentation. For letter-by-letter presentation, the reading rates for visual and tactile modes were very close—19.5 and 18 words per minute (wpm) respectively. The average word-at-a-time tactile reading rate of 44 wpm was lower than the corresponding visual rate of 108 wpm, but, as Troxel points out, "this is not surprising if we consider that random word lists were used for the tactile tests and ordinary English text was used for the visual tests." And he concludes, "on the whole, the performance through the tactile and visual senses is comparable when the information presentation is restricted to either a letter or a word at a time. The principal limitation to information intake appears to be cognition, and not the sensory channel that is employed."

Complexities of the braille code

The above conclusion prompts the questions, what are these cognitive factors that influence information intake in reading, and, can they be manipulated so as to improve the rate of intake of information? It is probably these "cognitive factors" that are largely (although not entirely) responsible for the apparent superiority of visual reading over tactile reading under "natural" conditions.

The most obvious "cognitive variable" in learning to read braille is the often difficult task of decoding braille symbols. If, as Mackworth (1972) states, "learning to read involves the slow formation of a large store of data in long-term memory," then the extra complexities of the braille code are likely to retard reading development since this long-term memory will have to contain the not inconsiderable number of rules and regulations associated with using contracted braille. This is going to be especially so if the braille code confuses, masks, or contradicts the cues that normally allow the beginning reader to encode the language patterns that facilitate efficient reading. This aspect of braille interfering with the perception of certain language patterns is discussed more fully in Hampshire (1974).

Code optimization

It is implied, therefore, that the braille code itself is responsible, to a large extent, for the slowness of braille reading, and not that braille is read tactually rather than visually. Alluisi (1961) has discussed some factors which influence the optimization of coding cutaneous stimuli. He defines the object of a code as optimizing the compatability between a stimulus symbol set and a response symbol set. That is, for braille, the compatability of the braille symbols and the units into which language is coded when we read or listen must be optimized. Exactly what these units of the language code might be are still being investigated. Several hypotheses have been suggested, for example, grammatical structures (Levin & Kaplan, 1970), linguistic constraints (Gibson et al., 1962), and the quality and quantity of surface structure cues to underlying structure (Fodor & Garrett, 1967), but no definite conclusions can yet be drawn.

Type of Stimulation

☐ The second factor that is probably responsible for the slowness of braille reading is the type of stimulation the tactile channel is required to mediate. Bliss and Crane (1969) have shown that tactile discrimination is optimal when the stimulation is vibratory, with a frequency of about 40 Hz. Clearly, braille does not provide this sort of tactile stimulation, but an interesting finding by Grunwald (1966) suggests a way of at least improving the stimulation characteristics of braille on the finger, which may allow very significant increases in braille reading speed.

Grunwald's experiments

Grunwald (1966, 1968) obtained his results while investigating the characteristics of a page braille-reading machine he was developing. This device allows sheets of paper embossed with braille characters to be moved at a known rate under the fingertips. Using three different types of text—random words, text from a high-school biology test, and meaningless binary dot patterns (e.g., dot/dot; dot/blank, etc.)—he determined the maximum speed the subjects were still able to pronounce the words, read the text, and perceive the presence or absence of the dot patterns respectively. All these measures gave the same number for the maximum sweep rate of the dots moving under the fingers for all subjects with reliable scores. This sweep rate was 13.8 centimeters per second, which is equivalent to (from statistical analysis of the texts used) 320 wpm. This suggests, as Grunwald (1966) points out, that braille can be perceived *dynamically*—the reader perceives patterns in time, rhythms, rather than geometrical patterns in space.

Analogy With Morse Code

☐ There is an analogy here with Morse Code. Bryan and Hunter (1897) showed that men learning Morse Code, a highly sequential perceptual task, like braille reading, build up higher units of language perception. They showed that new learners began by perceiving Morse letter by letter. After considerable training, however, they began to perceive word patterns directly, and even phrase patterns, despite the fact that the Morse symbols are exclusively letters.

Dynamic braille reading

Furthermore, the possibility of "dynamic braille reading" makes sense theoretically. Not only is the higher frequency of stimulation of braille on the fingertips, when read in this manner, more suited to the discriminative properties of the finger, it has also been argued (Bekesy, 1960) that there is a considerable similarity between the cutaneous sense and the auditory sense. The auditory sense is one that is most sensitive to time changes, rhythms, rather than spatial discrimination. Thus, to exploit the cutaneous sense as one sensitive to rhythm (rather than to spatial pattern, the optimum pattern for the visual sense) might result in greater speed in tactile reading.

Summary and Conclusions

☐ From this analysis of visual and tactile reading, the following points emerge. The comparison of visual and tactile reading showed that there is only one area where they significantly diverge: the *compatability* between the symbols and the sensory system used for perceiving these symbols. There are two possible factors that affect this compatability, the capabilities of the particular sensory system and the type of stimulation that the sense organs of that particular sensory system are required to mediate.

Improvements in braille needed

From Troxel's (1967) experiments it was concluded that cognition is the main limitation on information intake, and not the sensory channel used. From this it was argued that the braille code itself is responsible for inhibiting the speed of braille reading. This same point has been argued by Kolers (1972): "if the set of marks we use for reading is such as to require extended intellectual effort for their perception, as seems to be the case with braille, substantially less of our cognitive resources will be available for making contact with our stores of information, for interpreting or thinking about the information we are perceiving." It follows, therefore, that considerable improvements could be made in the ease of reading braille by making the contraction system far less complex and, if possible, taking full advantage of how language is processed by the reader in deciding the contractions to be used.

New modes of presentation

As regards the second factor, the type of stimulation the tactile sense is required to mediate, it seems that trying to exploit the tactile sense as one sensitive to rhythm rather than spatial discrimination is worthy of more research. Furthermore, if such "dynamic braille reading" were proved feasible, it would almost certainly be helpful if a simpler form of braille were used. That is, if all the cues available in print were also available in braille, so that they could be used in predicting and guessing words, then considerably faster reading might be facilitated.

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International Course for Teachers of Deaf-Blind Children to be Held in Holland

November 3-December 12, 1975

The Instituut voor Doven, the famous oral school for the deaf in Holland, has announced its fifth international course for teachers of deaf-blind children. The six-week course, running from November 3 to December 12, 1975, will be open to experienced teachers, psychologists, and others who work with deaf-blind children. The language of instruction will be English; a maximum of 25 persons will be enrolled in the course. There will be many classroom observations, films, and videotapes followed by discussion. Formal lectures will be delivered by such well known members of the school staff as Rev. Dr. Anton van Uden, Dr. Johann van Dijk, Miss Lieke de Leuw, and Dr. M. R. Sopers.

Further investigation

The fee of $550 will cover tuition, room and board with a selected Dutch family, and bus trips taken in conjunction with the course. Further information and application forms may be secured from Father J. van Eijndhoven, Director, Instituut voor Doven, Sint Michielsgestel, The Netherlands.

Career Education in 1975

ABSTRACT: The new emphasis in American primary and secondary schools on career education has led to a flurry of activity to insure that blind and visually handicapped students have equal access to the growing literature on learning about and preparing for the world of work. Ohio State University and the State of Texas have begun preparing such materials. The American Foundation for the Blind, through its specialist in career education and its Task Force on Career Education, has played an advocacy role in this movement. A mini-project, in progress, is testing the use of career education units in the curricula of six residential schools for the blind.

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The vocational educational amendments of 1968 presaged a quiet revolution in the lives of many persons—those with handicaps, as well as those considered "normal." Out of these amendments came a great push toward developing programs which would prepare persons for the world of work. A great deal of money was allocated to the various states to develop programs in vocational education which would lead to more comprehensive employment for all citizens within that state. Several years later, it was realized that vocational education as such was coming too late in the experience of most people, and that there needed to be a more solid base for the development of options that would lead to vocational education and eventually to the world of work.

National Advisory Council

☐ A National Advisory Council on Vocational Education was created in 1968 by the Congress. Its members, drawn from business, labor, education, and the general public, are appointed by the President. The charge to the Council is to advise the commissioner of education concerning the operation of vocational education programs, make recommendations on programs, and report to the secretary of the Department of Health, Education, and Welfare for eventual transmittal to Congress.

Origins of career education

In the process of discharging its duties, the Council became aware that federal and national thinking needed to be broadened. Therefore, in 1971, Commissioner of Education Sidney P. Marland, Jr., proposed the reordering of the whole education effort around a new concept called "career education." The National Advisory Council on Vocational Education, consequently, undertook to broaden its policies and scope to include the concept of career education.

There was a quiet upheaval in all of American education because Mr. Marland's appeal went to the roots of how and why children and youth were being educated in this country—and for what. Too often there were separate tracks for those considered college material and those considered only capable of preparing for a technical, trade, or service position.

A new concept

Career education is not simply a new name for what was once called vocational education. The concept of vocational education is only one part—and perhaps a final part—of the idea of career education. The old distinctions that crippled educational efforts, as Mr. Marland saw it, should be set aside, and from the earliest stages of education—formal or informal—everybody should be thinking about including options, ideas, suggestions, and material on what is out there in that large world of work. It was understood that the material ought to be appropriate for the ages and abilities of the children and youth to which it is directed.

Re-evaluation of education

There is hardly a state that is not now experimenting with some form of career education. This probably is an outcome of the universal conviction that American education has drifted away from any sensible intention and needs to be brought back on course. There has been great antagonism to educational systems which simply turn out people in separate tracks and which in turn cause them throughout their work life to stay in the original groove. Experimenting or dreaming of other careers might have been more appropriate. It is felt that education must be made much more relevant to the world of living and work but, at the same time, provide and encourage the possibility of choice and change.

Widespread Approval and Support

☐ By 1974, a great deal was happening in the states—and all without a federal law saying that career education had to be a part of the educational system. One-third of all the school districts in the United States have some career education elements—some good, some mediocre, and some poor. In more than 35 states, the Department of Education has a career education coordinator; at least 20 State Boards of Education have passed resolutions supporting the idea of career education for all—kindergarten through adulthood.

U.S. Office of Career Education

Career education costs a little more than the established general educational programs currently offered. Better counseling services and specialized staff are needed, ideas and creativity have to be stimulated, and real training programs instigated. However, the need was thought important enough at the federal level that an Office of Career Education, with separate funding authorization to foster, plan, and assess career education programs, was established by the educational amendments of 1974.

Dissidents

During the development of the concept of career education, there have been some dissidents. Vocational educators early had a wide margin of influence, even though their work is mainly limited to the upper secondary grades and young adults. There is still suspicion concerning the role of career education versus vocational education. It is expected in the years to come that there will be no "versus"; it will be understood that career education is life education and that vocational education is simply one part of it in experimenting and learning for a career.

Defining "Career Education"

☐ Perhaps we should stop to define career education. It is derived from the logical assumption that the educational process, no matter on what level, should help a student develop the capacity and skill to achieve self-fulfillment and economic independence as much as possible. Since each of us may be expected to spend the largest portion of our lives as earners, it is vital that we receive total preparation for our role as earners while we are learners. Career education recognizes the inevitable mutuality of the academic and the vocational and seeks to produce an integration of both, with the common objective of developing a wholeness in the educational process as well as a wholeness in the student.

Career education is open-ended, allowing for career change or advancement and/or the possibility or probability that a person may have several careers in a lifetime. The school's responsibility is to develop awareness of—and orientation to—the world of work, for wise decision-making concerning self and career is a continuing developmental process.

Kindergarten through adulthood

In its most simple form, career education combines helping the student to learn to live and to learn to make a living. It should be available at all levels of education from the kindergarten stage to the university level and beyond into adult education. A complete program of career education includes orientation to the world of work, broad exploration of occupational clusters, concentrated exploration of selected clusters, and career preparation for all students. This calls for incorporating the concept of career education into all basic subjects and not making it a separate "class" that is only given sporadically or at the whim of the teacher.

15 occupational clusters

The United States Office of Education has developed occupational clusters in 15 areas: 1) business and office, 2) marketing and distribution, 3) communications and media, 4) construction, 5) manufacturing, 6) transportation, 7) agri-business and natural resources, 8) marine science, 9) environmental control, 10) public service, 11) health, 12) hospitality and recreation, 13) personal services, 14) fine arts and humanities, and 15) consumer and homemaking-related occupations.

Goals in K-6, 7-9, 10-12

The goals of the early years, kindergarten through grade six, are career awareness and orientation; that is, the development of those attitudes and knowledge which come from a healthy evaluation of self and a proper appreciation of the value of work. In grades seven through nine the opportunity is presented for a broad exploration of the requirements to be met in order to be employable and beginning competence in work skills. At this level students are encouraged to explore in depth two or three broad career clusters. In grades ten through twelve, career preparation or vocational education begins. By senior high school a student should have made a tentative career selection and have begun acquiring specific skills and training, along with appropriate and related academic skills. Beyond this there is technical education, and so forth. It is hoped, of course, that these will lead to jobs. Additional training, or retraining, may be necessary to get into a field or to choose a different line.

AFB's Involvement

☐ The American Foundation for the Blind, for the last five or six years, has been extremely concerned about the field of career education as it is applied to blind and visually handicapped students. A specialist in career education was employed in the Division of Program Development to open up avenues and resources which had not been available on a national level before. A task force was invited to meet with Foundation staff to explore avenues for creating career education materials suitable for blind and visually handicapped students. This group was comprised of persons with expertise in education, career education, vocational education, as well as vocational rehabilitation. From the recommendations of this group, various activities were started.

OSU Center for Technical and Vocational Training

The AFB specialist in career education discovered that Ohio State University, through its Center for Technical and Vocational Education, had received a substantial grant to develop career education units in six different locales around the United States. These units were to be developed, tested, and then rewritten and retested. While this was in process, an attempt was made to include material in the career education units that would be suitable for blind and visually handicapped students. A project to adapt these units was proposed, but federal funding was not granted.

A project in El Paso

Concurrently it was discovered that the State of Texas, through its Region XIX Education Service Center in El Paso, had begun to work on concrete units in career education to be used in its schools. Because one of the staff at the Center had a background in the field of special education in vision, various elements helpful to blind and visually handicapped persons were considered. As an extension of this effort, a project was written, approved, and funded by Texas to develop career education materials for blind and visually handicapped persons, to test them in various residential schools and public settings, and, it was hoped, to come up with a report and materials which would be useful in other states.

The New Orleans conference

In trying to make an impact on various organizations and agencies concerned with career education, the Foundation has expended considerable time and effort. At present, it has been determined that the units developed at Ohio State University are not in the public domain and cannot be acquired for the purpose of adaptation. The materials being tested through the Texas project are for the ninth grade only; the director of the AFB Program Development Division is on the Advisory Committee for that project. Meanwhile, in order to generate interest among persons working in the field of career education, special education, and vocational rehabilitation, a conference was held in January 1973 in New Orleans to try to develop plans in a few selected states for the coordination of services and for funding for adapting career education materials and making them useful for visually handicapped students in regular public school systems. This coordinated effort met with varying degrees of success, but some programs are already beginning to show the positive results of this approach.

A second task force meeting

In January 1974, the Task Force on Career Education was brought together a second time to report on the first year's results, and also to garner further recommendations for AFB's role in its advocacy program for career education for all students, including blind and visually handicapped students. Again, recommendations were extensive, and several of them have been put into effect; however, with a vacancy in the position of specialist in career education, a great deal of additional work which needs to be done cannot be started.

Mini-Project

☐ However, the director of the Program Development Division established a mini-project to try out some materials already in the public domain and accessible. The superintendents of six residential schools for the blind were approached to see if they would be interested in being "guinea pigs" in this small project. They all gave their consent and each appointed a staff coordinator for the career education project in his residential school. These schools include the

Ohio State School for the Blind, Tennessee School for the Blind, Maryland School for the Blind, Western Pennsylvania School for Blind Children, Perkins School for the Blind, and Michigan School for the Blind. Additionally, two consultants were hired to help the coordinators and teachers in these six schools to incorporate material on career education into the regular classroom curricula of grades kindergarten through six.

Career education materials

In December 1974, the six coordinators and the two consultants met with the division director to start this mini-project. From January to June 1975, the coordinators and the staff of teachers in each school are incorporating as many units as possible in regular classroom work. The director and the two consultants will be visiting the schools periodically to check on advances or to help solve any difficulty which may arise. Certainly the six superintendents and teachers involved are to be commended highly for their willingness to take on such a project without financial remuneration and certainly with some disturbance in the regular classroom schedule. It is hoped that their pioneer efforts, when the report is compiled in the summer of 1975, will give us a base for one method of using career education materials in residential schools.

Only a first step

It is not expected that this mini-project will be the final step in AFB's efforts to develop career education materials. It is hoped that it will lead to the development of a larger project in which these materials, plus others, would be incorporated into the programs of all schools—residential or community, as well as the public schools where blind and visually handicapped children are enrolled. Additionally, it is hoped that a staff member can be assigned full-time to carry out more of the recommendations gathered from the experts in the field of career education.

An All-Out Approach

☐ Since career education is a continuing process, it follows that AFB needs to continue to be concerned also with vocational education, work-experience programs, on-the-job training, technical and college education, and successful placement and work opportunities. Only with an all-out approach, aimed at all individuals from kindergarten through adulthood, can we see the results of our early efforts as being helpful to blind and visually handicapped persons. Finding a life-style and work which are both useful to the community and meaningful and satisfactory to the individual affords a chance for the full life which is the right of every blind and visually handicapped person.

Next Month in the New Outlook

The May 1975 issue of the *New Outlook for the Blind* will include articles on early childhood services by Pauline M. Moor and by Rosemary O'Brien, on low vision services by Dagmar B. Friedman et al., on the vocational needs of the elderly by Thomas W. Dickey, and on tactile maps by Grahame James and Richard Swain.

Group Work With the Aged Blind Japanese in the Nursing Home and in the Community

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ABSTRACT: A nurse views the problems of multiple losses affecting aged blind persons in a long-term care facility. Cultural differences complicate the attempted solutions, hence the search for answers is extended into the community. It is noted that the Japanese blind in the community, because of feelings of shame and reluctance to be seen, are an "invisibile minority" needing assistance much as do the hospitalized aged blind. The use of "group work" in the community and in the convalescent hospital was found to be an effective means of resocializing and rehabilitating aged blind Japanese clients.

Introduction

The Keiro Nursing Home of Los Angeles was designed and launched five years ago for the restorative care of the Japanese elderly. As director of nursing services, I have spent the past three years working and socializing with the Japanese Issei (first generation, born in Japan) and Nisei (second generation, born and educated in the United States).

Consequently, during this period of time, I have been slowly learning and appreciating the complexities of personality and other characteristics of my patients. (In many respects I have found them to be very similar to my Norwegian grandparents, also immigrants to the United States. Like my grandparents they are slow to complain, patient, silently suffering, and sincere in their gratitude for whatever good comes their way.) They are sincerely delightful and engaging. Contrary to my initial belief that "they" were cold and unemotional, the opposite is the case and I find it easy to feel and show my affection.

The Japanese in America

The Japanese initially migrated to the United States at the turn of the century. The Chinese, having arrived earlier, bore the brunt of the general discrimination against Orientals and "The Yellow Peril" attitude was extended to the newly arrived Japanese with respect to employment, housing, and education. This attitude culminated in 1942 when more than 110,000 Japanese and Japanese-Americans were evacuated from their West Coast homes to concentration camps at the height of World War II hysteria.

Attitude toward government

The loss of home, property, and job obviously influenced everyone, but especially the Issei. The humiliation they suffered still influences their attitudes, though not as vindictiveness. I have learned, for example, that if I need to make a referral for visiting nurses or other health disciplines into their home, I must first find a Japanese-American volunteer, not only because of the language barrier, but also to assure them that the caller is not connected with threatening government controls. Frequently I found it difficult to understand their hostility, their withdrawal, their silence when subjects such as "governmental regulations" were mentioned and the consequent complications in the delivery of services by our convalescent hospital.

Hopelessness

In addition to the historical discrimination which has caused the aged Japanese to shrink from the mainstream of American culture, their traditional personality and pride prohibit their complaining and asking for help. They literally resign themselves to the hopeless situation and silently endure it. Once I came to this realization it was apparent that I needed to look beyond the confines of the hospital and into the community before I could fully begin to comprehend the Japanese aged as a minority, as a people, as human beings.

I became aware that I was not merely functioning as the director of nursing services of our convalescent hospital. I found that as I became increasingly aware of the cultural traits of my patients, I was more able to implement solutions to their nursing care problems. Nevertheless, I was completely baffled when confronted with meeting the needs of the *blind* Japanese aged.

The Nursing Home Residents

☐ I have been involved in gerontological nursing for the past nine years, so that I have been long aware of the dismal prognosis for the hospitalized aged blind person. Whenever one has been admitted for care, I have experienced a helpless feeling, knowing that he would almost certainly deteriorate both physiologically and psychologically.

Almost all of my aged patients have suffered loss of health, vitality, comfort, dignity, proximity with loved ones, and financial security. These indignities must be extremely difficult to cope with in themselves, but somehow, assisted by sympathetic families and caretakers, there is hope for improvement.

Effects of blindness

However, when blindness compounds these losses, the problems appear insoluble. Those patients who have become recently blind seemingly feel bitter toward all medical personnel, thinking that negligence has surely caused their suffering. Those who have been blind for years, and are fairly well adjusted to blindness in their own homes, become devastated by the unfamiliar surroundings and caretakers who are unable to empathize with their losses. As a result, in the hospital or nursing home setting, blind aged persons usually are unable to recuperate successfully physiologically from the disease or accident which necessitated hospitalization.

In addition to the dismal physiological prognosis, the isolation caused by the unfamiliar surroundings and the strange caretakers frequently contributed to mental confusion and aggressive inappropriate behavior. When this atmosphere is often compounded by a language barrier, the isolation is further entrenched.

In December 1973, ten of our 90 Japanese patients were blind, in addition to having other problems that incapacitated them. We attempted to comfort them and to teach our staff to interact with them, but our efforts were fruitless. It appeared we could do nothing right.

Introduction of Group Work

☐ At this time I was attending a class in the physiology of the aged at the University of Southern California. During a class session I expressed my frustration at being unable to cope with the withdrawal, depression, and mental confusion of my blind patients and of my inabilty to improve the level of their care. My instructor suggested I try "group work"; and with much encouragement and instruction, I began.

Inadequate care techniques

When I started carefully to assess our inadequacies in care techniques, I quickly saw that we who were sighted were quite unable to "think blind" and thus understand our patients' needs. I saw a blind patient jump with fright when a caretaker touched him without first speaking to him. I would see the hurt look on his face when he discovered he was talking to an empty room; the nurse had neglected to tell him she was leaving. I saw his feeble attempts at independence impeded by wheelchairs carelessly left in his path. I know that the group work or individual efforts to improve our approach would be useless unless we did, indeed, learn to "think blind." Then we would need to gear our level of care to this new understanding.

Japanese American Sightless Institute

In my search for insight on the problem, I was directed to the Japanese American Sightless Institute. Here I found a group of blind Nisei (second generation Japanese-Americans) who were functioning as a *group* to help Japanese-American blind persons in the community. (Theirs is a very interesting story of group work which I knew little about in my first associations with them. I later found that it was rather remarkable in the community, and I would like to describe it in the latter portion of this paper.) We appealed to them for help.

At our first meeting together, our hospital social worker, recreational therapist, in-service director, and I told them of our concern for our aged blind patients and of our feelings of inadequacy in their health care. They schooled us in the fundamentals of interacting with blind persons and promised to send representatives from their group to our weekly group sessions.

Goals for the Patients

☐ We established two goals for our aged blind group. We had noted that because our blind clients were so unable to interact with our sighted staff or with each other, they simply withdrew. Our first goal was to establish some basis for social interaction between hospital personnel and patients and, even more important, among the patients themselves. Secondly, we hoped to increase their physical abilities and improve their independence in the activities of daily living.

We patterned our group after the format described by Burnside (1971). The sessions were planned for one hour on Wednesday afternoons; the group leader was to remain constant, "goodies" always culminated the session, and activities would be varied as to the needs and receptivity of the clients. Several of the group members spoke no English; all of them were more fluent in Japanese. The group leader was chosen for her familiarity with the language, as well as for her patience, gentleness, and resourcefulness.

Baseline

Before the group was actually started, a fairly comprehensive analysis of our clients' age, sex, diet, diagnosis, level of dependency, and degree of blindness were recorded for future evaluation. Two of our ten blind patients were not included in the group since their physical condition necessitated bedcare. Of the eight selected, four were males and four were females. The oldest was a gentleman 99 years old and the youngest, a 77-year-old lady; the median age was 87. The problems upon which we focused our attention were mainly withdrawal, depression, and mental confusion.

The patients

Our 77-year-old lady was usually combative when she was approached. She was probably the least alert mentally, but loved reminiscence and the tea and Japanese-style goodies that were always served. One of our gentlemen, who at age 94 had broken his hip, had also had the misfortune of losing his sight within a few months prior to his admission. When he became physically able to walk, he was so angry at his loss of eyesight that he withdrew to his bed in sullen silence and refused to communicate or to rehabilitate. Two gentlemen, age 93 and 95, in addition to being totally blind, were also almost completely deaf. We attempted the use of extra personnel to interpret for them individually, but ultimately substituted one-to-one therapy as their deafness made group interaction impossible for them. Our second youngest lady was 78. In addition to severe crippling arthritis and diabetes, she had had a catarectomy. Her blindness was recent and progressive, and she was also bitter. She felt that her plight was due to medical negligence. She needed hand-feeding and total care. She never smiled and tears frequently trickled down her cheeks.

The First Group Meeting

☐ Our first group meetings were marked with mistakes and disappointments. We attempted to learn to "think blind" as our friends from the Sightless Institute had taught us, but at our first meeting we failed to place our wheelchair-bound patients close enough so that touch could compensate somewhat for lack of sight. We introduced our group members to one another, but as none of them were used to entering into conversations, it was limited to polite yes's and no's on their part. I even made the mistake of serving hot fudge sundaes, forgetting that Issei are not fond of American sweets.

Activities

After each session we analyzed our mistakes and successes together. We found that in the early sessions, reminiscing was the only way to elicit conversation from the patients. When the conversation was related to their childhood homes in Japan or when familiar Japanese folk music was played, they became animated. At first, they would become embarrassed when they realized they were conversing with us and one another, and retreat back into silence. At this time we introduced handcrafts into our activities. After overcoming their initial hesitance to participate, we found clay modeling excellent in establishing group interaction. We asked them to make simple forms that were traditional and familiar; to our amazement they were soon assisting each other clumsily, but eventually with more expertise than some of our sighted group leaders. Our lady with the arthritic-stiffened fingers insisted that we look up for her in the encyclopedia exactly how many legs an octopus had. She meticulously counted over and over again, seeing only with her fingertips, until she was content that hers was an authentic, eight-legged creature.

Necessary adaptations

We learned very quickly to adapt all our activities to the Japanese culture. The modeling session in which we asked them to make "gingerbread boys" was a dull, polite disaster. We couldn't understand their unusual lack of enthusiasm for the project until one of us remembered that the "gingerbread boy" was an American fairy tale, and that it was very unlikely that any of our group had heard of him or seen his picture.

Our physical exercises, which they greatly enjoyed, were done to Japanese music. Part of each session was spent reading aloud the local Japanese newspaper; this is a vital link in reality orientation.

Making decorations

They made decorations for the various traditional Japanese holidays.

Our group leader ingeniously devised self-help ways to minimize the handicap of blindness. I was delighted to see her improvisation for making paper chains needed for some traditional decorations. She placed each color of cut paper strip into a separate compartment of an egg carton, then glue in the last one. Even the most senile patient in the group was able to use her system to make beautifully done paper chains. I was overjoyed to see them actually competing to see who could make the longest chain.

Games

Many games were devised to utilize the remaining senses. Our group leader brought vegetables from home. Using their senses of touch and smell, all of them guessed the Japanese egg plant correctly, most of them guessed those American vegetables that had characteristic odors, such as tomato and carrots. None of them correctly identified parsnips. Since they are almost identical to the Japanese white radish everyone insisted it was a *daikon*. After the guessing game, the group insisted that they eat the vegetables. The leader, who had planned other activities, wisely tabled her previous plans and hastily cleaned, sliced, and shared her vegetables.

Refreshments

Group sessions always end with refreshments. "Goodies" vary from *senbei* (Japanese cookies) to *sashimi* (raw fish) to *mochi* (holiday sweet rice cake). Tea is always served. We frequently select festive teas, such as cherry blossom, rather than the green tea we always serve at meal times.

Results

☐ At the time of this writing, our group has been meeting weekly for about ten months. We have seen progress toward our goals of social interaction and physical improvement beyond our fondest hopes. The gentleman who wouldn't walk, now exercises in the halls many times daily, rarely without a wide grin on his face. The arthritic lady might eat a meal in bed if she is really feeling badly, but refuses to miss her group session. She rarely cries and will occasionally ask for pain medication. Our 77-year-old, who used to need restraints, still gets lost in the halls, but instead of striking at us, laughs and waits for one of us to rescue her.

Referrals

If a new blind patient is admitted to the hospital, his physician usually points out to us the fact that he is blind and requests that he be allowed to participate in the "blind" group. Belonging has become a status symbol within our hospital and patients who simply withdrew and would not speak of their blindness now speak freely about *Mohjin*, their term for the blind.

Cultural traits

Since working with the group I have become even more sensitive to cultural personality traits. Our Issei (it formerly would have read "The" Issei) almost never complain. They might not eat food that is served to them, but they would not dream of offending by complaining. Neither do they voice their symptoms of pain or discomfort. If unfamiliar with the cultural reserve and acceptance of suffering, it would be very easy to miss meeting their needs.

In-Service Training

☐ As we began to observe some success in the group sessions, it became increasingly apparent that we badly needed comprehensive in-service training in the care of blind patients. We knew that any joys experienced in the group could quickly be erased by the careless treatment of a blind client by *any* of our personnel.

Because many of our nursing attendants, kitchen workers, and housekeepers speak limited English, we use a combination of written English, demonstrations, and oral instruction in the Japanese language for our classes. Our written lessons include the following points that our friends at the Japanese American Sightless Institute had stressed for us before we started the group. Always: 1) Before touching a blind person, speak to him, call him by name, explain to him what you propose to do. 2) Find out what his needs are, and what his personal preferences are. 3) When you are leaving him, say good-bye; let him know if you intend to return. 4) Request his cooperation in his care, and let him do whatever he's able for himself. 5) Treat him normally and naturally as you would any other adult. 6) Keep his physical environment constant. Avoid moving furniture or placing obstacles to hinder his movements and increase his dependency on others. 7) Help him to establish goals that are realistic for him.

Guidelines

Use of blindfold

Demonstrations of the correct and incorrect approaches to care were made. The instructor blindfolded one of the students and placed her in a wheelchair. Then she brought in a dinner tray which she slammed down onto the tray of the chair without a word of explanation, and left the room. Later she removed the tray without assisting the "patient" to eat the unfinished food. Next she brought in a wash basin without speaking, and started to wash the "patient's" face. This elicited a scream of fright from the "patient" and looks of horror and amazement from the observing students.

By this time the students could no longer restrain their comments and the correct techniques were suggested by them. They stressed the fact that careful greeting, explanation, and conferences as to patient preferences should precede the serving of food, bathing, and other nursing functions. Psychological reactions were also discussed. The student who had been the "patient" said that she had experienced a variety of reactions, from discomfort and fear to panic and the desire to retaliate physically against the caretaker.

As a final exercise the class was blindfolded and then served ice cream and tea. Clumsiness in opening the ice cream containers and the difficulty of keeping fingers out of the hot tea amused us while alerting us to the mental trauma these blind patients might experience in performing even the simplest activities of daily living.

Training for all three shifts

Similar classes were held for all three shifts in an effort to provide "around-the-clock" concern for our blind patients. We posted signs on the patients' bulletin boards to advise the personnel which patients actually were blind. After our classes, we were gratified to find that employees began to point out to us, the instructors, the needs of the patients that they discovered; to our even greater delight, they devised ways these needs could best be met.

The Aged Blind in the Community

☐ Aged Japanese-Americans are very secluded from the community at large. Many of them live in "Little Tokyo," an area in downtown Los Angeles that is not too unlike the "Chinatowns" in numerous metropolitan areas. Here the Japanese language is spoken, the accoutrements of Japanese culture can be purchased, and here the aged Japanese can more easily care for his own needs.

The Sightless Institute

Uniquely enough, among this minority, there is another, "invisible" minority. Traditionally the Japanese have viewed the handicapped, particularly the blind, as shameful. As noted in the *Japanese American Sightless Institute Progress Report* (S.R.S. Project #RD-08-P-55949), "The effects of cultural elements of *haji* (nearest English equivalent is 'pride'), *shigataganai* (nearest English word is 'hopelessness'), and *enryo* (nearest English word is 'reservation' or 'hesitation') on the position and role of the ethnic handicapped, especially the blind, has led to their isolation. These cultural elements exert negative social pressure on families and friends of the blind, undermining their human value. The blind, viewed as family shame, have been either hidden or ignored by the family, in an attempt to maintain family pride. Such family attitudes instill and reinforce the development of low self-esteem of Japanese-American blind. The perpetuation of such is witnessed by the absence of blind persons in social organizations."

The Japanese American Sightless Institute was formed as a means of attempting to bridge the gaps between agency and community services delivered to this "invisible minority," as well as to the ethnic community.

Groups at the Institute

Their group consisted of six blind participants, a sighted coordinator, and two blind instructors. It was hoped that through group interaction they might learn to accept and adapt to their handicaps more readily, to learn braille, and to identify and assist the "invisible" blind of the community. The coordinator was the only sighted person of the group and was chosen for bilingual ability, knowledge of cultural mores and institutions, and administrative ability. One of the instructors spoke fluent Japanese, the other had a more limited knowledge. The six participants were between the ages of 40 and 60, four males and two females. From their histories it was noted that they had become blind as adults, most of them very recently. They shared a reluctance to be seen in the community. One participant, it was noted, did not wish to ride the buses as that would necessitate his being seen with his white cane. All of them shared a common depression over the circumstances caused by the onset of blindness.

Four-Phase Program

☐ The program for group interaction and instruction was set up in six-month phases. During Phase I, finger sensitization was developed. Along with the braille instruction came rap sessions where participants could talk about common problems imposed upon them by their blindness. Gradually a feeling of common goals and "oneness" was developed.

Community attitudes

Phase II saw more rapid reading patterns developing, as well as more group feeling and more uninhibited discussion. At this stage, interaction with other community agencies began. Members of the group began to go out into the community to present their perspectives. They found that audiences were encouragingly receptive and that they were able to dispel many of the stereotypes of blind and handicapped people.

Funding discontinued

Phase III was marked with more proficiency in braille reading. The outreach of the group became more spontaneous and more natural for group members who by now had developed a higher self-esteem. It was at this time that the group became involved in the group work at Keiro Nursing Home. Phase IV was designed for developing writing and typing skills. The group used public media to attempt to dispel stigmas traditionally attached to blind persons.

Unfortunately the funding that would have allowed the group to reach its maximum potential was not renewed. The group did, however, manage to demonstrate conclusively that their original goals could be achieved, and that "group" was a viable means for accomplishing interaction. Isolated members of the "Invisible Minority" began contacting the Institute for help. Each inquiry was handled individually to best meet the needs of the callers.

Application to Other Minorities

☐ When I first became impressed with the successful use of group sessions to promote social interaction, I was determined to share the techniques with others, especially people who might be working with the blind in minority groups. I had thought I would first explain what I had learned of the complexities of the Japanese culture and of our group operational patterns. Then, I thought, I would apply my findings to other minority groups. I blush whenever I remember my superficial thinking.

Specific steps

Now if I were to find myself suddenly in a working situation with another minority group, I would start slowly, very slowly, all over again. But of this I would be certain—I would certainly use group interaction as the means for the change I wished to implement. Whether socialization is the primary goal in itself (as in the case of blind persons in a convalescent hospital) or as a means to an end (as in the work in the community), group appears to be by far the best vehicle available. It affords mutual reassurance and a frame of reference for each group member.

Client participation

Then I would seek the advice and assistance of members of *that* particular ethnic minority, particularly blind members of that minority. They would be the most efficient in training me in the sensitivity I would need to even begin to meet their needs. Then I would arm myself with a sense of humor, perseverance, patience, and a heart full of empathy and concern. And only then would I start my group.

Reference

Burnside, I. M. Long-term group work with the hospitalized aged. *The Gerontologist*, 1971, **11**(Pt. 1), 213-218.

First National Conference on Aging and Blindness

The First National Conference on Aging and Blindness is being held April 24-26, 1975, at the Hotel Monteleone in New Orleans, Louisiana. The theme of the conference is "Meeting the Challenges of Elderly Persons with Sight Difficulties—Action '76." The conference is being jointly sponsored by the American Foundation for the Blind, the Administration of Aging, Department of Health, Education and Welfare (DHEW); and the Office for the Blind and Visually Handicapped, Rehabilitation Services Administration, DHEW.

The conference is open to all state personnel in the fields of aging and blindness and to other interested persons from voluntary organizations. There is no registration fee. Those who wish to attend the conference should write to the National Conference on Aging and Blindness, c/o Miss Dorothy Demby, American Foundation for the Blind, 15 West Sixteenth Street, New York, New York 10011.

Using Environmental Design to Teach Ward Layout to Severely and Profoundly Retarded Blind Persons: A Proposal

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ABSTRACT: Two behavior modification specialists moved onto a ward for severely and profoundly retarded blind men in a state institution and implemented programs to train them in basic self-care skills including toileting, bathing, dressing, teethbrushing, etc. They found that the residents' blindness greatly inhibited their attaining independence in the various skill areas of the program. Measures taken indicated that the residents also had an extremely low incidence of movement and social interaction and depended upon staff to a great degree to lead them around the ward. A simple and inexpensive environmental design system utilizing wall and floor cues is proposed to decrease fear of the environment and to promote movement, independence, and social interaction among the residents.

Life in the Ward

A team of behavior modification specialists are currently implementing a self-care program on a ward housing 30 severely and profoundly retarded blind males who range in age from 22 to 51 years. They have an average IQ of ten and they all lack some of the basic self-help skills. They vary from total dependence on staff for even biological needs (e.g., they must be fed, because they won't feed themselves) to requiring only minimal supervision for such skills. All activities of daily living are carried out on a group basis with the aides leading the residents through a very methodical, structured regimen. The residents are bathed and dressed by the ward staff with very little social interaction occurring, and almost everyone in the cottage feeds themselves with spoons from trays which are placed on the table. Periodically, the residents are taken out of doors to sit right outside the ward on benches. Of the six residents who freely ambulate around the cottage, several are discouraged because of disruptive behaviors. Seven residents are incontinent and make no effort to find the bathroom area. Most of the rest must also be led to the toilet, and to every destination on the ward.

Effects of blindness

As we began to establish a baseline for the individual residents to determine their exact needs, it soon became evident that the blind residents' primary needs were actually quite different from those of the sighted, profoundly retarded populations with whom we had worked previously. It became apparent that their blindness was a greater handicap than their profound retardation and that this handicap would affect all our programming efforts in one way or another. For example, in order to obtain independent toileting behavior (which is the goal of our toilet training program), it would be necessary for the residents to find the toilet themselves. We discovered, however, that very few of the residents were familiar with the ward layout and could find their way from place to place. In fact, very few of the residents ever *moved* from the spot they were in, unless they were physically led by the aides. The whole day was spent

This article is based on a paper read at a meeting of Region 9, American Association of Mental Deficiency, November 7-9, 1975, Silver Springs, Maryland.

sitting, rocking, or sleeping in the day room with almost no movement and, consequently, with almost no initiation of social interaction (or any other behaviors) on their part.

Need for orientation

From our daily observations while on the ward, we concluded that most residents, having devised no system of their own for ward orientation, had become totally dependent on staff and preferred the safety of sitting or standing in one place to the prospect of bumping into things or getting lost and disoriented while attempting to travel from one place to another.

Measuring Movement and Interaction

☐ To obtain a measure of the residents' interaction and movement on the ward, which seemed extremely low to us in comparison with that of other profoundly retarded persons, we employed a sampling technique using a map of the ward upon which symbols representing staff and residents and any of their interactions were placed at half-hour intervals (from 6am to 8pm). We found that out of 25 to 27 residents on the ward (vacations at home, hospitalizations, etc. temporarily reduced the census from 30), an average of 20 residents were *stationary* across *all* observations, i.e., residents spent all their time in one place in the dayroom. This average would be even larger had we taken obligatory times away from the dayroom (e.g., during meals, bathing, toileting, etc.) out of our calculations. Moreover, social interactions between staff and residents for the whole group averaged only 0.7 across 29 observations; this includes all instances of leading residents to toilets, feeding, dressing, and bathing them and any other staff or routine-initiated interaction. Interaction between residents occurred only 0.2 times per observation.

A Tactile System

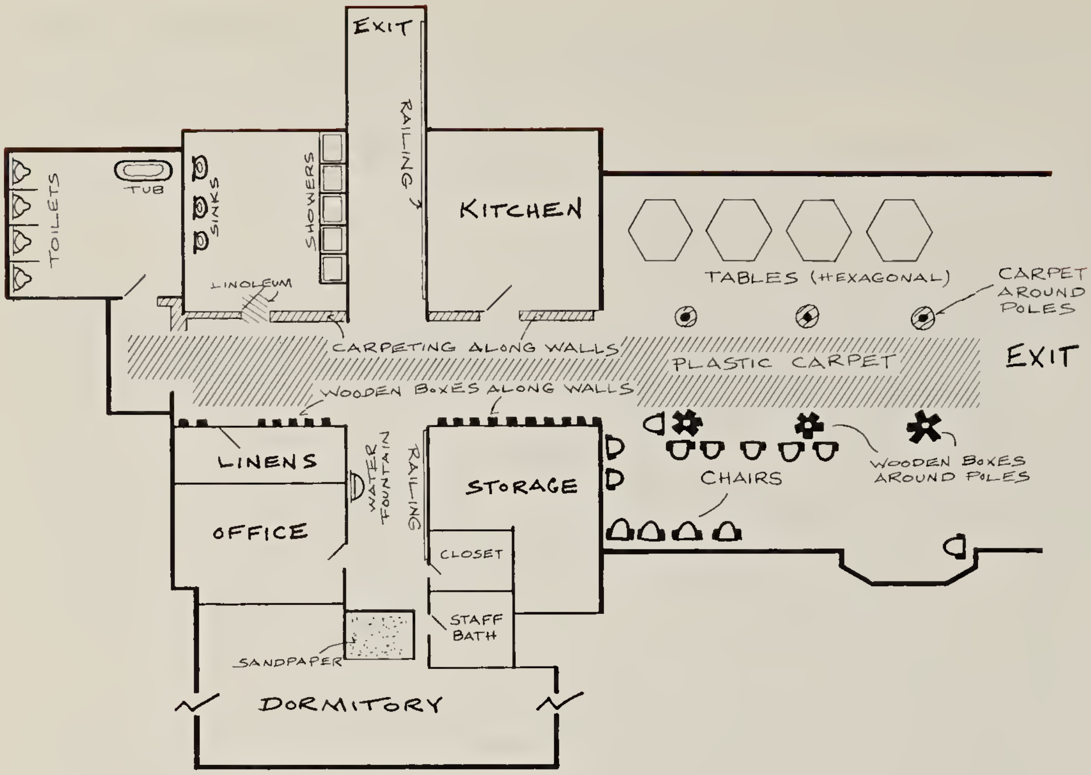
☐ In view of these results, a tactile system that would provide environmental cues regarding a resident's location at any one time was devised. We hope that a resident with reduced fears of his environment and complete knowledge of the ward layout would be more likely to get up and go to the toilet, the water fountain, or elsewhere on his own, thus eliminating complete dependence on staff for care of bodily functions. Movement, interpersonal contact, and social interaction between residents and staff would also be expected to increase.

Trailing devices

After a short preliminary survey of the existing literature on working with profoundly retarded blind persons yielded very little data, we decided to go ahead and formulate our own system for teaching the ward layout to our residents. Basically, our system is an inexpensive, safe, and sanitary method employing tactile cues to guide the resident from one place to another via the walls of the ward. Walls were chosen over any kind of a flooring system (e.g., using different textures of carpets in different rooms of the ward) because: 1) Carpeting whole areas would be too expensive. 2) It would create problems in cleaning and maintenance since many of the residents were not toilet trained. 3) It could muffle any sound cues the residents might use to find their way (e.g., we found that a few residents can find their way to the dayroom using the noise of the radio, staff, and residents). 4) Wearing shoes would cut down on sensitivity to floors, but when using a tactile system employing the hands, no such problems would be encountered.

Emphasis on self-care

Since our initial programming efforts would be in the self-care areas of toilet training, showering, etc., we decided to work up an aid for reaching these training areas (toilets, shower stalls) via a route from the dayroom (which, as



mentioned before, was the most populated area of the ward). For this purpose, we took a long section of carpeting (something which our volunteer services already had on hand) and cut it into long strips about five or six inches wide. We glued these strips at waist level to any walls, doors, poles, etc. which stood along the straight line which led from the center of the dayroom to the toileting and showering area. We then requested that the aides have the resident trail the back of his right hand (with fingers curled to avoid sprains) along the route whenever they had occasion during the normal routine to lead the resident to the self-care area. In addition, we devised a task analysis and a backward-chaining procedure to provide more intensive and structured training sessions for each individual. For example, we would first have the resident trail the rug into the toilet room from about a foot away from the door, and then we would reward him for this. Once he had learned to do this much on command, we would move back a step and have him trail the rug from four or five feet away from the door to the toilet room, then ten feet away, and so on.

Additional Trailing Devices

☐ Since our eventual goal is to have the residents learn the whole ward layout, we intend to cover all the walls at waist level with some form of identifiable, grossly different tactile cue. Since the dayroom and the hallway leading out of it are the most travelled, we will next cover that with contact-covered, five-inch wooden square plaques no more than six inches apart. These, as with all of the trailing devices, will be at waist level so that when the resident reaches a corner he will be able to pick up another trail if he wishes. On the right wall leading out of the bedroom, we hope to put some kind of rounded ledge, bar, or railing which would come out gradually from the corners to avoid bumping into sharp edges. This route will lead straight across the hallway to the outside door. Depending on the thickness of the walls opposite this trail, we may carve circles five inches in diameter or use some other kind of recessed cues. Failing this, we can always apply some other kind of material (perhaps velvet, felt, or upholstery) or a strip of wallpaper to form another trail.

Some floor cues

Along with these wall cues, we will have a limited number of easily washable floor cues to signal to the resident that he is entering or leaving a particular room. For example, around the threshold to the toilet and showering rooms, linoleum could be used in contrast with the concrete floor to signal that the resident is moving in or out of that particular area. At the end of the hallway leading into the bedroom a piece of carpeting or soft kitchen flooring could be used. A different floor cue could be used for the threshold of the outside door, the kitchen door, etc. In addition to these floor cues, we hope to obtain a plastic runner to line the major route that leads all the way from the far end of the dayroom to the toilet and showering rooms. In this way, if the resident is in the center of the dayroom (where there are no walls to follow), he has only to walk across the dayroom until he reaches the plastic runner. He could then follow this in a straight line up to the toilets. Additional cues for movement in or out of a room could appear in the form of a patch of material at the end of each trail that leads into a room.

Additional routes

Once the major straight-line routes have been learned (e.g., to the toilet from the dayroom, to the outside from the bedroom), other routes consisting of combinations of tactile cues could be taught. For example, if the resident wanted to go outside from the dayroom, he could follow first the rug strip to the corner and then the railing, whereas if he wanted to go to the bedroom from the dayroom he would first follow wooden blocks, then the railing.

Mansfield Training School

We have recently learned of another system used in Connecticut's Mansfield Training School where Ms. Ellen Levy has designed a special unit for blind residents that involves environmental modifications. With $45,000 donated by the Lions Club, they have been able to carpet whole areas of the cottage with different textured rugs, install individual shower stalls, provide folding doors for the toilets, etc. In addition, every piece of furniture, down to even such fixtures as the doorknobs, have been covered with some distinctive type of material. At Mansfield they have also utilized sound by lowering ceilings and providing stereo systems and various sound cues at opposite ends of the room.

Future Plans

☐ Following their suggestion of using square tables with rounded edges to aid orientation, we hope to use geometrically shaped tables with rounded edges in the dining room. As a further aid, we plan to provide distinctive recessed carvings to delineate each individual place setting (e.g., large geometric forms which the residents can trace to identify their places). We would also like to cover our toys and large port-a-pit equipment with various textured materials to assist in the development of our residents' tactile discrimination.

Although Mansfield has not reported any data on the effectiveness of their program, verbal reports from the staff indicate that the residents have become more self-confident, trusting, and capable. In our own situation, we feel that our environmental design proposal will assist the residents in learning the ward layout and help them to become more independent as well as more active in terms of movement and social interaction.

Some Observations on Services for Deaf-Blind Persons

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ABSTRACT: Interest in services for deaf-blind persons has been on the increase during the last 15 years. One result has been the creation of the National Center for Deaf-Blind Youths and Adults; another has been the laying of a solid groundwork in a great many agencies for the blind for the ongoing provision of services to the deaf-blind across the nation. These services are aimed at minimizing the limiting effects of the handicap through training and the use of sensory aids. More research is needed to develop better aids and to understand better the means of perception and conceptualization utilized by deaf-blind persons. The National Center plays an active role in training staff in services for the deaf-blind and in insuring that a diversity of such services are available to all who need them.

Scarcely ten years ago, any employment of deaf-blind people was considered remarkable and, with the exception of a handful of highly superior individuals, the employment of the deaf-blind under fully competitive conditions was almost unheard of.

In 1959, the Industrial Home for the Blind published a seven-volume report on a study entitled "Rehabilitation of Deaf-Blind Persons" which it had conducted from 1956 to 1958 with the support of the then Office of Vocational Rehabilitation, U.S. Department of Health, Education, and Welfare. The report engendered a great deal of interest in services for deaf-blind adults; but this interest failed to result in any significant increase in services for the deaf-blind.

Services in the Past

☐ From time to time over the years, agencies for the blind provided employment for some deaf-blind persons in their sheltered workshops and training for others in their homes. However, these efforts, generally, were motivated by a desire to meet the needs of particular deaf-blind individuals and failed to reach out to find and serve other deaf-blind people in their communities. Consequently, when those who were served moved away, or, for other reasons, withdrew from service, the efforts involved in serving them lapsed and the experience and knowledge gained through these efforts failed to benefit other deaf-blind individuals.

Education

It may be noted that, until recent years, deaf-blind children, with very few exceptions, were educated in residential schools for the blind. This probably resulted from the fact that the communication and mobility problems of the deaf-blind are more similar to those of the hearing blind than to those of the

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seeing deaf. This fact, too, together with the fact that work for the adult blind has a history of providing sheltered employment which extends over more than one hundred years, probably explains why the limited services that were provided for deaf-blind adults over the years were also based in the field of work for the blind.

The National Center

☐ In order to take advantage of the high interest in services for deaf-blind adults engendered by the report published in 1959, the Industrial Home for the Blind, with the support of the Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare, embarked on a regional research and demonstration project in 1962 which continued until it was succeeded, in 1969, by the National Center for Deaf-Blind Youths and Adults. The project was designed to demonstrate the feasibility of rehabilitation services for the deaf-blind and to stimulate the development of services for this group in state and local rehabilitation agencies. Within a few years, a number of breakthroughs were achieved and, before the project terminated, several agencies were committed to provide sheltered employment and other services for the deaf-blind and a number of deaf-blind individuals had been placed in fully competitive employment.

Training results

Of 62 deaf-blind youths and adults who received evaluation and rehabilitation training at the temporary headquarters of the National Center prior to January 1, 1974, 18 percent are working in fully competitive employment; 31 percent are in sheltered workshops; eight percent are homemakers; five percent are employed in home industry or family business enterprises; eight percent are enrolled in programs of higher education; three percent are continuing training at other facilities; and five percent, who completed their training late in the year, are awaiting placement. The remainder of the group included three who returned to custodial institutions; two who are ill; one who was reclassified as "not deaf"; six who are receiving services in their homes, including two whose families would not permit them to accept employment; and two who died. In addition, through the joint efforts of the National Center and cooperating agencies, employment was obtained for 16 other deaf-blind persons (four in competitive employment, 11 in sheltered workshops, and one in a home industry program), and we have information on still other deaf-blind persons who are employed.

Effects of Early Success

☐ These figures reflect an encouraging beginning; but we see evidence of a fairly widespread misconception: the fact that success in the rehabilitation of deaf-blind persons is possible signifies that it can be achieved easily, without the need for special understanding and special effort. There is some danger that many well-intentioned efforts to serve deaf-blind people will prove to be abortive because of a failure to lay a solid foundation of experience and training for those who undertake them. Also, because of the widespread tendency to measure accomplishment almost exclusively in quantitative terms, we see a danger of concentrating primary attention on meeting the needs of the most capable and least handicapped deaf-blind individuals in order to present a picture of inexpensive and spectacular success.

Solid groundwork is essential

A good part of the success in the rehabilitation of deaf-blind persons achieved during the past few years can be attributed to the groundwork that had been laid by the regional research and demonstration project which immediately preceded the National Center for Deaf-Blind Youths and Adults. While that project was designed to operate primarily within Regions I, II, and III of the Department of Health, Education, and Welfare, its services were extended into a number of other states on the request of agencies within those states, and it produced a nucleus of experienced personnel as well as a fairly large number of personnel throughout the United States with a limited but significant amount of experience in working directly with deaf-blind individuals. The enthusiasm and the convictions which these individuals developed as a result of satisfying experiences in serving deaf-blind persons had positive spillover effects on agency and community attitudes toward rehabilitation services for the deaf-blind in many parts of the country. However, while this and related developments certainly contributed to some of the current success in serving the deaf-blind, they cannot be expected to form an adequate foundation for the substantial expansion and improvement in services for the deaf-blind that will be required in the years ahead if deaf-blind people in the United States and its jurisdictions are to be afforded adequate opportunities for rehabilitation and self-fulfillment. Further, we must recognize that we have been passing through a long period of expanding labor markets and interest in the welfare of severely handicapped people. With contracted employment opportunities and the related consequences of the energy shortage and the increasing competition for government and voluntary funds to help meet the newly appreciated needs of large numbers of disadvantaged people, work for the deaf-blind will need to demonstrate its ability to realize solid accomplishments if it is to deserve and receive the support it will require in the years ahead.

Further work is required

A Definition of "Deaf-Blind"

☐ Sound planning to meet the needs of the deaf-blind requires the development of valid data on the composition and distribution of this group of handicapped people. This cannot be accomplished until we can decide on criteria for determining who is "deaf-blind." If we are to avoid dissipating much of the money and effort intended to benefit the deaf-blind by serving people with marginal auditory and visual deficits or by serving those—such as the mentally retarded—who are sometimes mistaken for deaf-blind people, we must agree on a definition of "deaf-blind" that will help us to identify the individuals who have a proper claim to services offered under programs designed for this most severely handicapped group.

Two-tier definition

Recognizing that the effect of the combination of significant deficits in hearing and in vision may be greater than the sum of the effects of each of these deficits, we believe that a two-tier definition of "deaf-blind" is indicated, including 1) a liberal but clear definition that might be used as the condition of eligibility for isolated specialized services for the deaf-blind or eligibility for full-time enrollment in a rehabilitation program for the deaf, the blind, or the severely multiply handicapped with specialists available under the program to help meet the specific problems growing out of the combination of significant auditory and visual deficits; and, 2) a restrictive definition to assure that individuals with very substantial auditory and visual deficits will be given highest priority for full service under specialized programs designed to serve the deaf-blind.

The definition in use

The National Center maintains such a two-tier definition, offering the full resources of its residential evaluation and rehabilitation training program to those who fall within the restrictive definition of "deaf-blind" and making available a variety of specialized services directly or through cooperating state and local agencies to those who fall within the liberal definition of "deaf-blind." Our two-tier definition, we might mention, is adequately functional at present, but we hope to refine it as new knowledge and expertise become available for this purpose.

Minimizing the Handicap

☐ It is a cardinal principle of rehabilitation that training around any handicap should not proceed until every reasonable possibility for reducing or eliminating the handicap has been exhausted. Unquestionably, the first possibility that should be explored is that which may be offered through medical or surgical treatment; but, when the handicap itself cannot be reduced or eliminated, the limiting effects of the handicap can often be reduced through the proper use of sensory aids. Lenses, hearing aids, and other ocular and auditory devices can often be used to maximize the usefulness of residual vision or residual hearing. However, another means of minimizing the handicapping effects of deafness and blindness is the employment of mechanical and electronic aids to enhance the usefulness of the remaining senses.

Sensory Aids

☐ Various devices employed in the reading and writing of braille are now conventional. The Optacon, an electronic device that makes it possible to read ordinary print by touch, has already proved to be of value and holds much promise for some deaf-blind individuals in computer programming, in studying, etc. A number of electronic devices for the wireless transmission of vibratory signals have proved useful to alert deaf-blind persons to the ringing of a doorbell, the sounding of a fire alarm, etc., and we now see good promise of greatly improving the versatility and reliability of this method of communication in the near future. The transmission of braille by telephone has been amply demonstrated and holds exciting promise for increasing the ability of deaf-blind people to communicate with each other over considerable distances and, through the use of available teletypewriter keyboards and visual print-out add-on devices, to communicate with people who can see and who have not had occasion to learn braille. We may hope that, in the not too distant future, the radio transmission of braille and/or embossed print will make it possible for deaf-blind individuals to communicate with almost anyone in their immediate vicinity without the necessity of maintaining physical contact with such a person or depending on a telephone-line connection with him. Such an accomplishment will offer not only practical benefits to the deaf-blind individual but will provide him with a kind of emancipation from the need to accommodate himself to the location and movements of others in the course of communicating with them that may hold important psychological benefits for him.

Long-distance communication

The development of aids

Research in the development and evaluation of sensory aids has, too often, been dismissed as mere gadgeteering. In the past, many starts on the development of sensory aids have been made by volunteers, and even by professional engineers who have not had the funds or the opportunity to carry their work in this area beyond the excitement of its novelty. We are now in a fairly good position to conduct well-planned, long-range research in the development of sensory aids for the deaf-blind. This kind of research has already paid good dividends and there is a need to conduct much more of it on a coordinated basis to avoid duplication of effort and to pool the results of all competent effort in this area with the objective of giving the deaf-blind their fair share of what modern-day technology has to contribute toward minimizing their handicap.

Perception and Conceptualization

☐ There is a great deal of research that needs to be done into the means of perception and the methods of conceptualization of deaf-blind individuals. We need to study the more subtle aspects of body language so that deaf-blind persons might be taught how to enhance their ability to sense the attitudes, the moods, and the reactions of the people with whom they communicate through the clasp of the hand, the rhythm of the walk, the presence or absence of tenseness, etc. Even many of us who have a great deal of contact with deaf-blind people and who think we have a fairly sophisticated understanding of them are often astounded at the thoroughness and accuracy of the assessments that some of them can make of other people through seemingly casual contact. We need to learn more about how this is accomplished.

Pre-impairment imagery

We need to study how to preserve, strengthen, and enhance imagery acquired before the loss of vision or the loss of hearing. In this connection, we need to study the extent to which information acquired through one sense can be converted into the language or medium of another sense. People who lose their sight report that they visualize environments in which they formerly lived with sight as they saw them but that, when they return to such environments, they can largely update the picture of the environments which they have preserved in their mind's eye with information they acquire through touch, sound, the kinesthetic sense, and even the olfactory sense. Some people who have, or who have had, a small amount of vision report that they are visually minded and that they can enhance their visual images with information they acquire through their remaining senses but which they could never perceive visually. Totally deaf people who lost their hearing in childhood demonstrate their ability to reproduce melody and other sounds that they may not have experienced for many years. Some of them show an uncanny sense of the appropriateness of the sound—aside from the meaning—of a word or a phrase in a sentence.

Touch and kinesthesis

We speak a good deal about blind people learning through the sense of touch despite the fact that the sense of touch provides little or no information beyond that related to temperature, texure, and the shape of very small objects. Relationships, proportion, size, etc., except where very small dimensions are involved, are perceived through the kinesthetic sense functioning in conjunction with the tactual sense. The fingers, the hands, the arms, and the feet and legs are employed in the use of the kinesthetic sense (depending upon the size of the object or the area that is being examined). We know of no text or manual on the techniques of perceiving through kinesthesis and touch. There is a need to study the operation of these senses and to develop and record techniques for teaching how to make best use of them.

A New Approach to Research

☐ The foregoing are only randomly selected examples of areas that require careful study to improve our ability to teach deaf-blind children and adults how to broaden and better particularize their knowledge and increase their skills. We do not believe that very much real understanding in these areas can be achieved through conventional techniques of research. We must depend very largely on the introspection and insight of perceptive, sensitive deaf-blind individuals for gathering information in these areas. Research in these areas, we believe, requires investigators who are highly competent in the use of sound research techniques, who have had extensive experience in work with the deaf-blind, and who can maintain a close and sensitive relationship, based upon genuine mutual respect, with the deaf-blind individuals involved in their research. The investigator and the subjects of his study in such research, we believe, should undergo a period of joint training to minimize semantic differences in their thinking and to achieve a high degree of common purpose for the research which they will jointly conduct. Through careful interviews, strengthened by thoughtful prodding and questioning, the investigator should elicit from the deaf-blind subjects as much information as possible about how they think, the content and structure of their imagery, and the capacities and limitations that determine it. From such information, the investigator may form impressions and postulate hypotheses, which should be subject to critical examination by the subjects, that might be tested for reliability and validity through conventional research techniques. Only through such an approach, we believe, can meaningful information be developed that could be useful in the education and rehabilitation of deaf-blind people.

Interviews

Staff Development

☐ Unfortunately, the limited experience in the field of services for the deaf-blind and the meagerness of the literature that exists in this field provide little opportunity for accelerating the preparation of staff who are required to meet the challenge that confronts us, a challenge of overcoming a substantial delinquency in the development of adequate skill and knowledge to meet the educational and rehabilitation needs of most deaf-blind persons. There is no effective way to bypass any substantial part of the time-consuming process of learning by doing. To work with the deaf-blind effectively, it is essential to acquire experience to provide a framework in which to adapt the skills and knowledge that comprise the various helping professions that can contribute to this work.

National Center training

The National Center offers a one-week program of training in services to deaf-blind youths and adults to workers in agencies for the blind and agencies for the deaf and to others who are likely to work with deaf-blind persons. This program includes four and a half days and three evenings of training, consisting of lectures, seminars, observation, and practicum.

Limited enrollment

A large amount of individual attention is required by those who enroll in this program to enable them to relate the skills and knowledge they acquire in the program to the responsibilities of their respective professional positions.

Because of this, we find it desirable to limit enrollment in each section of the program to six. Also, because the staff who instruct in this program are the same staff who provide rehabilitation services for deaf-blind trainees at the National Center and who, from time to time, are called upon to provide consultation and demonstration services for other agencies interested in serving the deaf-blind, the program cannot be repeated more than four or five times a year without running the risk of attenuating the services offered by the National Center. Most of those who have completed the program devote significant portions of their time to serving deaf-blind clients of their employing agencies and cooperate very closely with the staff of the National Center. The quality of this cooperation may best be seen in the fact that the Center's regional representatives frequently characterize many of the workers who have completed the program as adjunct staff of the Center.

Counterpart training

Counterpart training is offered to individual workers employed by agencies cooperating with the National Center when it is clear that this training will result in the early introduction or expansion of a specialized service for deaf-blind persons. In this training, which is generally planned for a two-week period, the worker invests several days in observing the rehabilitation and research programs of the National Center and in becoming familiar with the objectives and philosophy that underlie these programs. During the balance of the training period, the worker trains with his counterpart at the National Center. If he is a rehabilitation counselor, he will train with one of the Center's rehabilitation counselors, if he is a mobility instructor, he will train with a mobility instructor, etc. This affords him an opportunity to observe and practice the special approaches and techniques employed in adapting and supplementing the skills and knowledge of his professional discipline to serve deaf-blind persons.

College and University Students

☐ Field training has been offered to graduate and undergraduate students in social work, speech therapy, and audiology. To the extent that the demands on its staff and resources will permit, the Center is prepared to offer field training in these and in any other area in which it is qualified to do so, provided the training is requested by the students involved and provided these students show some promise of using this training to benefit deaf-blind persons. The National Center is not equipped to serve as a regular field placement resource for colleges and universities, but it is eager to do what it can to strengthen the interest of college and university students who may be potential workers in this field of service or who may enter allied fields of service where they may be able to contribute to the expansion of services for deaf-blind people and the acceptance of deaf-blind individuals in the professional and/or lay communities.

Future training services

After the National Center moves into its specially designed, permanent facilities (now under construction), it hopes to expand and diversify its staff development and training services. It will continue to offer short-term training for new and prospective workers in the field of services to the deaf-blind who have completed their professional or paraprofessional training or whose work may not require such training. In addition, it plans to affiliate with one or more universities and to provide long-term training in conjunction with graduate and undergraduate programs of study in the various professional disciplines that fill important roles in serving deaf-blind people. This training will be offered to individuals interested in careers in service to deaf-blind persons and, in some cases, fellowships and residencies may be provided.

Specialists in Deaf-Blind Work

☐ One of the most promising avenues for substantially expanding resources for the rehabilitation of deaf-blind youths and adults, we believe, may lie in the training of specialists in service to the deaf-blind for work in rehabilitation agencies for the blind, the deaf, or the severely multiply handicapped. Many individuals who are deaf-blind, within the kind of two-tier definition referred to earlier in this paper, and some, perhaps, with more serious auditory and visual deficits than this group, could probably be well served in rehabilitation agencies which do not specialize in services for the deaf-blind but which are interested in serving them. Such agencies, prepared to supplement their regular personnel with specialists equipped to help meet the unique problems that grow out of the combination of deafness and blindness—those in the area of communication, for example—and to help the regular personnel to adapt the use of their skills and knowledge to serve their deaf-blind clientele, could make it possible to serve many deaf-blind individuals in or close to their home communities and to avoid an unnecessary drain on the facilities and services of the National Center. We anticipate that, in time, such agencies —with the help of the National Center's regional representatives and other consultants, where required—will serve many times as many deaf-blind youths and adults as will be served at the Long Island headquarters of the National Center.

Role of the National Center

☐ We expect that the clients served at our headquarters will, generally, be deaf-blind individuals with rehabilitation needs that will require a full staff of specialists in services for the deaf-blind and the kind of specially designed facilities that will be available only at our headquarters. In this way, the National Center will serve as a "court of last resort" for those deaf-blind clients who could not be served at other agencies. At the same time, it will provide an opportunity for developing and testing rehabilitation methods for serving severely handicapped deaf-blind persons which could be used to enhance the capacities of cooperating agencies in serving many of the deaf-blind clients. The National Center, too, will serve as a clearinghouse for problems and achievements for agencies cooperating with it so that the experience of all of these agencies might be pooled with that of the National Center to provide a source of ideas and information that should be helpful in furthering both their collective and individual efforts on behalf of deaf-blind persons. The research resources of the National Center will be dedicated to meeting those needs for special skills, devices, and information which emerge from the total efforts of all cooperating agencies interested in the rehabilitation of deaf-blind individuals and its research department will make maximum use of their experience and thinking.

Assessing our efforts

The worth of whatever provisions all of us make for the education and rehabilitation of deaf-blind children, youths, and adults will ultimately be determined, first, by the effect that these provisions have on the quality of life of the deaf-blind individuals served by them and, second, by the number of individuals we serve effectively and the severity of their auditory and visual deficits. While remunerative employment is a very important objective for many deaf-blind persons, it must not be allowed to become the sole criterion for determining their success or failure. Because this objective is so difficult and so satisfying to achieve with a major deficit in the two most important senses, we sometimes tend to lose sight of the fact that quite a number of deaf-blind persons—like many nonhandicapped in the population at large—have no need for or any interest in remunerative employment. Many of these desire most of all to be able to effectively fill their individual roles as homemakers. Others aspire to an active participation in their families' enterprises. Still others yearn to further their education, increase their self-reliance, or achieve any one of a number of objectives—sometimes trivial objectives—to enhance their sense of their own worth and their ability to earn the respect of those whose esteem is important to them. Even a deaf-blind individual who, as a result of prolonged and severe privation or of severely limited personal endowments, has lived a life of nearly total dependence and who can be helped to significantly reduce his dependence can be considered as rehabilitated if his achievement represents an optimum use of his residual capacities and provides a sense of personal accomplishment and satisfaction.

A Diversity of Programs

☐ Since, among the deaf-blind—as among any group of individuals—potentialities and aspirations are varied, there is a need to provide as much diversity as possible in the rehabilitation programs we offer. We should be careful not to allow our concern for one segment of the deaf-blind population to cause us to become so preoccupied with its needs that we overlook the important needs of the entire deaf-blind population.

Deaf-blind children

Our concern for the needs of those children whose deafness and blindness and, often, additional handicaps are the result of rubella can easily distort our perspective of the challenge of providing appropriate services for all of the deaf-blind. Without in any way minimizing our responsibility to help meet the needs of the rubella children with whom we are now concerned—a very high proportion of whom are very low-functioning children—we should not lose sight of the fact that there are some children who are deaf-blind as a result of causes other than rubella and that some of these have potentialities that will not be adequately developed through programs designed for low-functioning deaf-blind children. Also, we should bear in mind that for every deaf-blind child in this country, there are probably about nine deaf-blind adults, most of whom have been very seriously neglected. Many of these deserve the very earliest and very best assistance we can offer to help them achieve some satisfaction out of life.

One-tenth of deaf-blind are children

With the high incidence of deaf-blindness caused by rubella, it may be difficult to realize that deaf-blind children probably comprise no more than about ten percent of the total deaf-blind population. When retrolental fibroplasia (RLF) was responsible for 80 to 90 percent of blind children of preschool age in the early 1950's, many felt that blind children constituted a large part of the total blind population. Yet, as late as 1966, 12 years after the cause of RLF was identified and the condition became largely controlled, the National Society for the Prevention of Blindness found that blind children under the age of 20 comprised *almost* ten percent of the blind population. In *Facts About Blindness,* (published by the American Foundation for the Blind) we note that "about ten percent of the world's population is of school age." In view of these facts, even though we have no reliable figures to indicate the proportion of the deaf population that is of school age, we can assume that deaf-blind children comprise no more than about ten percent of the deaf-blind population.

Services for adults will benefit children

Some people seem to feel that efforts and resources expended in serving deaf-blind adults reduce our capacity for preparing to meet the needs of deaf-blind children when they become adults; but we can feel reassured in the knowledge that in meeting our obligation to deaf-blind adults, we are incidentally, but significantly, serving deaf-blind children. That is, skills, devices, and information that prove effective in serving today's deaf-blind adults will be available to serve today's deaf-blind children when they become adults; experience in serving adults helps to make clear the challenges and the opportunities that await today's children in the years ahead so that their education today can be better geared to meet the challenges and make good use of the opportunities that lie ahead.

Programs and Facilities

☐ We believe that there is time to gather more data, to do more thinking, and to explore the extent to which existing programs and facilities can be used to meet the needs of today's deaf-blind children when they become adults. Very likely, most of these children will be found to be deaf-blind as a result of the 1964-65 rubella epidemic. This means that they will be only 15 or 16 years old in 1980. It has already been determined that many of them will require total custodial care for the rest of their lives. Some of them will be found to be capable of entering fully competitive employment including, in exceptional cases, technical, professional, or administrative work. The challenge of this latter group will have to be met on a highly individualized basis and will tax the imagination, ingenuity, energy, and faith of everyone concerned in their education and rehabilitation. It is the intermediate group, with capacities that range from extreme inadequacy for any significant degree of independence to adequacy for a high degree of independence in an adapted environment offering appropriate help, for whom fairly broad special provisions will have to be made.

A great challenge and opportunity

Many of the children in the intermediate group will present major educational problems. We hope that the schools and other educational programs that serve them will resist the temptation to avoid these problems by giving up too soon on the children who present them or by moving these children into rehabilitation programs too early. The educational setting, which is typically available to a child over a period of 12 years or more and which offers an opportunity to coordinate teaching with emotional and intellectual readiness for learning during the various stages of an individual's basic development, affords opportunities for teaching and training which, if not used, will never be available to the same degree in adulthood. We all need to remind ourselves

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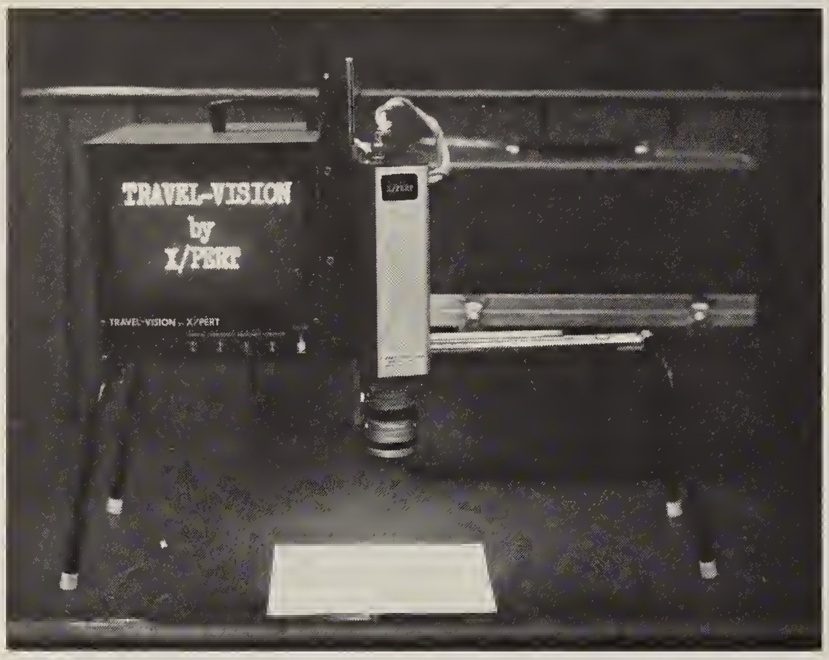

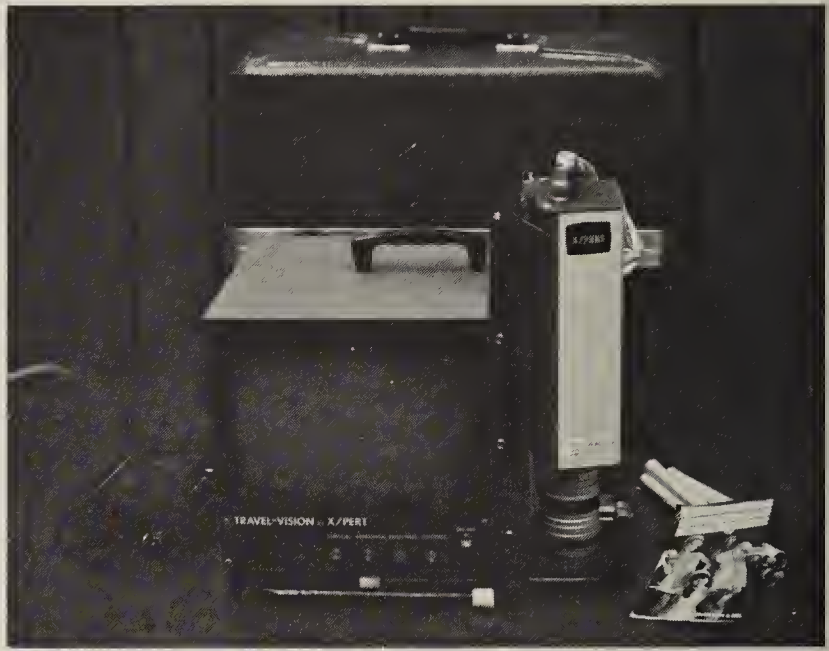

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that ineducability, untrainability, and nonfeasibility for rehabilitation reflect not only the limitations of the individuals who suffer from these conditions, but, equally, the inadequacies of the individuals and programs available to serve them. Those whom we cannot serve adequately present us with the greatest challenge to improve our ability to serve and should be retained in our programs as long as possible for their sakes as well as for the opportunities they afford us to improve our knowledge, our skills, and our programs.

Services for Adults in the Future

☐ The experience of the National Center demonstrates that many properly trained deaf-blind adults can be well served by existing sheltered workshops and work activity centers. It may very well be that residential work activity centers or some sort of similar programs which will combine work with continuing reinforcement of rehabilitation training on a very long-range or permanent basis will prove to be required for low-functioning deaf-blind people who do not need and are damaged by total custodial care over a protracted period of time. Before building facilities for such programs, we might do well to determine the availability of unused or under-used facilities that could be adapted for use in serving low-functioning deaf-blind people. Even if it proves advisable ultimately to build special facilities for this purpose, we think, based on our experience at the National Center, that it would be desirable to use borrowed or rented facilities temporarily to afford an opportunity to acquire the kind of experience that will indicate what might be required in the location and design of the facilities to be built for permanent use.

Careful planning

In planning a program to provide limited employment for severely handicapped, low-functioning individuals, there are considerations that are too often overlooked which can make the difference between success and failure in the program. In addition to studying the composition and distribution of the group to be served, the kind of professional and technical services that will be required to meet their needs, and the kind of environment that will be likely to be conducive to good emotional health for the group, it is important to determine what kind of work they can produce within their limited capacities that is likely to be of salable quality. Marketing research to determine the availability of suitable subcontract work and the size and location of markets for products that might be produced by the group to be served should be used to provide important input for planning the location, size, and equipment of any facility to be designed to provide residence and employment for any severely handicapped group.

Coming in the New Outlook

Future issues of the *New Outlook for the Blind* will include articles on training teachers of multiply handicapped children, perceptual organization in blind children, and teaching mathematics. A special issue next fall will be devoted to testing and assessment.

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Review

A Guide to the Care of Low Vision Patients, edited by Julian D. Newman, O.D. St. Louis: American Optometric Association, 1974. 343 pp. $10.00

Reviewed by Eleanor E. Faye, M.D.

Low vision practitioners tend to be orderly souls who enjoy combining the technical knowledge of optical hardware with the challenge the low vision patient presents to the doctor who has a bent toward rehabilitation. These days clinical skills have top priority, and the direction of the future is in the training and patient followup done with the help of low vision technicians.

This guide, although directed to the practicing doctor of optometry, has collected papers of 14 different authorities in the low vision field including optometrists, an ophthalmologist, a social worker, a low vision technician, and a librarian. The orientation is practical and clinical—so practical and all inclusive that it does not restrict the reading audience to any one discipline. Any worker in allied fields who has contact with low vision patients can gain insights into procedures of the examination, low vision aids, psychology and sociology, office management, and communication with community resources.

The clinical material is more concerned with management of the adult with low vision than the child. Although very little specific material about children is included, an educator could still gain a general understanding of the principles of examination and treatment. Appendix E has a bibliography on special education for the teacher who is interested in more detailed references.

There are 17 papers covering everything from the basic low vision examination, eye pathology, several excellent chapters which describe the mechanics and philosophy of prescribing, systems of aids (both optical and nonoptical), psychological and sociological factors, and finally, a helpful chapter detailing questions most asked by low vision patients with practical answers.

There are five appendices which contain a wealth of useful information, in themselves well worth the modest price of this volume.

Appendix A is a complete list of optical and nonoptical aids coded numerically to refer to Appendix D, which is an alphabetized source list divided into "Section I: Manufacturers and Suppliers" and "Section II: Organizations and Publishers." The price list is, unfortunately, already outdated.

Appendix B lists special testing equipment with sources.

Appendix C is a list of visual acuity charts with sources available in Appendix D.

Appendix E, an annotated bibliography on low vision assembled by Grace Weiner, is an important section. It is reassuring to see how much has been written about low vision since 1960 (the year arbitrarily selected to start the annotation). The value of the collection has been further enhanced by the use of four broad categories for the articles: 1) epidemiology, 2) examination techniques, 3) clinical treatment, and 4) rehabilitation and special education, with monographs listed at the end in a special section.

The material is clearly written in bold type on matte white paper. Unfortunately, however, there are a great many typographical errors. The technical descriptions are remarkably well handled, so that any reader, regardless of his level of training or involvement, can gain useful information.

Although 14 opinions are offered, there is a feeling of unanimity running through the book. There is a reflection of the "new philosophy" in low vision which emphasizes what patients *can* do with their partial sight, rather than what they *can't* do with their partial blindness. The emphasis is on caring for the patient's welfare, and recognition of the time and skill it takes to provide complete rehabilitation (not only optical aids, but also complete services from other community resources). Care is taken to discuss a wide range of reasonably priced aids.

The emphasis is on responsibility, technical knowledge, and skill in recognizing the complex needs of the patient. Readers who are not actually working at the examiner's level with patients would be wise to read this book to gain an appreciation of what goes on in a complete low vision examination given by a practitioner or clinic. They would be able to see how important it is to have a full service, as opposed to the trial-and-error aid selection often resorted to in areas where there are no professional low vision resources. This book and this reviewer make a plea to people involved in this field to put pressure on local agencies or institutions to provide this much needed service for low vision patients all over the country. This guide is an excellent resource manual which fills many gaps in currently available publications.

Dr. Faye is medical director for the Lighthouse Low Vision Service, New York Association for the Blind, New York City.

House Without Windows, by Ray and Gloria Sewell, as told to Renate Wilson, Toronto: Peter Martin Associates Limited, 1974. $8.95

Reviewed by Dava Grayson

Much has been written about the personal management training and rehabilitation of blind persons and much has been made of the fact that the blind can live independent, fulfilling lives. Often, however, although this literature provides a competent body of teaching techniques and statistics, one is still left with little idea of what it is actually like to be blind. The management skills do not add up to a day in the life of a real person—the blind individual, whose life is not simply the sum total of so many programmed activities. Told mainly from the viewpoint of Gloria Mortimore Sewell, *House Without Windows* in a biography of two blind people who met through their work at an agency for the blind and subsequently married. Theirs is a story that will entertain as well as educate and as such, is an excellent introduction into what it is like to be blind. It is a very valuable book for the family and friends of blind people, as well as the general public.

Through their own very personal story, Ray and Gloria Sewell show how blind people go about their daily lives: working, learning, housekeeping, socializing. As they discuss the

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beginning of married life and the adjustments that must invariably be made, they are able to explain some of the differences between adventitious and congenital blindness. (He had lost his vision in a car accident as a young adult; she was born visually impaired.) Problems that one need not be blind to identify with (such as Gloria's decision to return to work after a period of being a fulltime homemaker: "I felt I was wasting my hard-earned education.") are discussed in terms of the blind person's particular situation (it is harder for a visually impaired person, no matter how well qualified, to find employment), with the result that we see blind people as they really are—as individuals, but coping with both the visual handicap and the prejudices of the sighted world. A church group discussion on blindness led by Ray and Gloria provides a good summary of sighted people's attitudes toward the blind and how blind people would like the sighted to treat them. However, it is because Ray and Gloria come across as individuals, rather than just representatives of the blind as a group, that stereotypes are destroyed.

The Sewells are from Canada, where all services for the blind are carried out by one institution, the Canadian National Institute for the Blind (CNIB), which, in Gloria's words, acts as "father, mother, employer, and counsellor." (The title of the book comes from the CNIB axiom that "there should be windows on one side of the house," in other words, that the blind should not marry the blind.) As this organization plays such a crucial role in the lives of both Ray and Gloria, comments and criticisms of CNIB appear throughout the book. In general, they feel that the CNIB does a better job of helping newly blinded people function in a sighted world than it does of helping the congenitally blind, who leave the "institutionalized atmosphere" of the Ontario School for the Blind with "no concept of how to manage in anything but a group of blind people." Whether or not they have presented a fair picture of the CNIB (and I am in no way capable to judge), the value of their critique lies, for those of us who work with the blind in the United States, in its pointing out the mistakes that even the most well-meaning of agencies can make.

Somehow I could not help wishing that Ray, who was at one time the CNIB director of rehabilitation for Manitoba, had not eventually settled for selling candy and soda in a vending stand—it is one thing to decide to withdraw from the "achievement syndrome" but, considering Ray's background, was this another example of the fear of leaving the "sheltering arms" of the CNIB, a problem Ray and Gloria admit is "really very deeply ingrained in our psychological make-up"? However, this book is about personal choices and not a text of what the blind ought to do, and the Sewells do, nonetheless, provide an extremely positive example of blind people leading satisfying, happy, what we like to call "normal" lives. To them "the knowledge that to those who really know us we are never 'that poor blind couple' but simply 'our good friends Ray and Gloria' " is greatly prized. Their book does an admirable job of conveying this through the warm and often humorous story of the problems and joys of their lives.

Ms. Grayson is a New Outlook *editor.*

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Mary Maie Richardson, head librarian.

Toward Objective Mobility Evaluation: Some Thoughts on a Theory, by Leslie Kay. American Foundation for the Blind, Inc. (15 West 16th Street, New York, New York 10011), 1974, 55p. $2.00. Professor Kay heads the Department of Electrical Engineering at the University of Canterbury in Christchurch, New Zealand. He is the inventor of the Binaural Environmental Sensor and has been actively involved in studying mobility skills and behavior patterns for a number of years.

Modern Research Towards Improving Educational Opportunities for the Visually Handicapped, by M. J. Tobin. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 58, No. 692, December 1974, pp. 313-317. Text of a paper presented at the Fifth General Assembly of the World Council for the Welfare of the Blind, held August 7-16, 1974, in Sao Paulo, Brazil.

Guide Dog or Long Cane? by Anthony de Silva. *The New Beacon* (see address above), Vol. 58, No. 692, December 1974, pp. 320-322. The author, who is blind, discusses the advantages and disadvantages of both guide dog and long cane and sets forth his reasons for using both.

The Optacon Reading System, by James C. Bliss and Mary W. Moore. *Education of the Visually Handicapped* (Association for Education of the Visually Handicapped, 919 Walnut Street, 4th Floor, Philadelphia, Pennsylvania 19107), Vol. 6, No. 4, December 1974, pp. 98-102. A history of the development of the Optacon with a detailed description of its operation. This is the first of a series of related articles which will appear in subsequent issues of the journal.

They Opened Our Eyes: The Story of an Exploratory Art Program for Visually-Impaired Multiply-Handicapped Children, by Judith Rubin and Janet Klineman. *Education of the Visually Handicapped* (see address above), Vol. 6, No. 4, December 1974, pp. 106-113. Report on a federal project conducted during the 1969-70 school year at the Western Pennsylvania School for Blind Children in Pittsburgh. Participants in the art program were 16 multiply handicapped children, five to 13 years of age.

Communicative Behavior of Deaf-Blind Children, by W. Scott Curtis, Edward T. Donlon and David Tweedie. *Education of the Visually Handicapped* (see address above), Vol. 6, No. 4, December 1974, pp. 114-118. Second in a series of articles concerning various

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aspects of a three-year project using a video tape procedure in assessing the abilities of deaf-blind children.

High School Speech Assistants in a Residential School for the Blind, by Beverly Means Briggs. *Education of the Visually Handicapped* (see address above), Vol. 6, No. 4, December 1974, pp. 119-124. Description of a three-year pilot program at the Ohio State School for the Blind in which high school students enrolled at the school acted as teaching assistants to provide younger children with practice in speech skills.

Method for Quantitative Analysis of Dramatic Play, by Perla Tait. *Perceptual and Motor Skills* (Box 1441, Missoula, Montana 59801), Vol. 39, No. 2, October 1974, pp. 1012-1014. In developing her method for quantitative analysis, Dr. Tait worked with data she had gathered for a previously published study concerning the play behavior of blind children.

Group Insurance and the Handicapped, by L. N. Loban. *The Blind Californian* (The National Federation of the Blind of California, 3315 Cabrillo Street, San Francisco, California 94121), Vol. 15, No. 2, Fall 1974, pp. 23-26. A report prepared for the Governor's Committee on Employment of the Handicapped. It is based on questionnaire replies from 14 insurance companies operating in California in the fields of group medical and group life insurance.

Bioptic Telescopic Spectacles for Driving a Motor Vehicle, by Gerald Fonda. *The Archives of Ophthalmology* (American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610), Vol. 92, October 1974, pp. 348-349. Brief report on an optical aid which has enabled persons with impaired vision to obtain licenses in some states—Massachusetts, New Hampshire, California, Maine, North Carolina and Florida. Reprint requests should be addressed to the author, Low Vision Rehabilitation Service, Saint Barnabas Medical Center, Livingston, New Jersey 07039.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information are desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Aging

The Proceedings of the National Conference on the Aging Driver, cosponsored by the American Medical Association and the American Association of Motor Vehicle Administration, is now available for $3.00 from Health and Safety Associates, P. O. Box 222, Morton Grove, Illinois, 60053. Prices on quantity orders will be supplied on request.

Education

Economic Inflation: Hazard for the Handicapped, by Raphael Simches. *Exceptional Children* (The Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091), Vol. 41, No. 4, January 1975, pp. 229-242. "The spectre of inflation could not have occurred at a more inopportune time for the nation's children, and particularly the handicapped children." The author discusses the continued spiraling of costs that is reducing the expansion and improvement of needed programs for handicapped children. He proposes some solutions to the problem, such as government spending reductions.

Pamphlets

The Aging Eye: Facts on Eye Care for Older Persons, (National Society for the Prevention of Blindness, 79 Madison Avenue, New York, New York 10016), 1974. Single copy free; $6 per 100 copies; $50 per 1,000 copies. Discusses natural age-related changes in the eye, as well as changes related to eye diseases and disorders. Includes information on low vision aids and facilities.

Sunglasses . . . know what you're getting and what they're really for, (National Society for the Prevention of Blindness, 79 Madison Avenue, New York, New York 10016), 1974. Single copy free; $6 per 100 copies; $50 per 1,000 copies. Discusses the reasons for wearing sunglasses, the types available, and how to select a pair for quality, visual comfort and protection.

Sex Education

Not Made of Stone: The Sexual Problems of Handicapped People, by K. Heslinga, in association with A.M.C.M. Schellen and A. Berkuyl. Charles C Thomas, Publ., (301-327 E. Lawrence Avenue, Springfield, Illinois 62717), 208 p. $15.75. Founded on the principle that handicapped persons have the right to sexual fulfillment, this book encourages further investigation and solutions to the sexual problems of the handicapped. Discussed are several specific motor disabilities, respiratory disorders, and skin diseases, and their consequences to the person's sex life. For a clearer understanding of the problems, the sociological, as well as the physical, aspects of sex are also discussed.

Statistical Surveys

Characteristics of Persons with Corrective Lenses, by Mary H. Wilder. National Center for Health Statistics, Health Resources Administration, U.S. Public Health Service. *Vital and Health Statistics* (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402), Series 10, No. 93, DHEW Publication No. (HRA) 75-1520, September 1974, 37 p., $1.05. This report presents information on the use of corrective lenses by the noninstitutionalized population, three years old and over, in the United States. The data includes the types of corrective lenses used and their distribution in the population according to age, sex, race, region, and family income.

Vocational Rehabilitation

Program Evaluation: A Resource Handbook for Vocational Rehabilitation, by Eleanor C. Bennett and Marvin Weisinger. ICD Rehabilitation and Research Center (340 East 24th Street, New York, New York 10010), 1974. 150 p. $5.00. The authors reviewed over 250 sources on program evaluation and organized them into a practical manual form. Discussion includes program assessment, program evaluation design, program evaluation, compendium of measures, and abstracts of practical illustrations. Also included are field examples; a glossary; and a reading list, which includes program evaluation design, indices, scales, nomenclature, and bibliographies.

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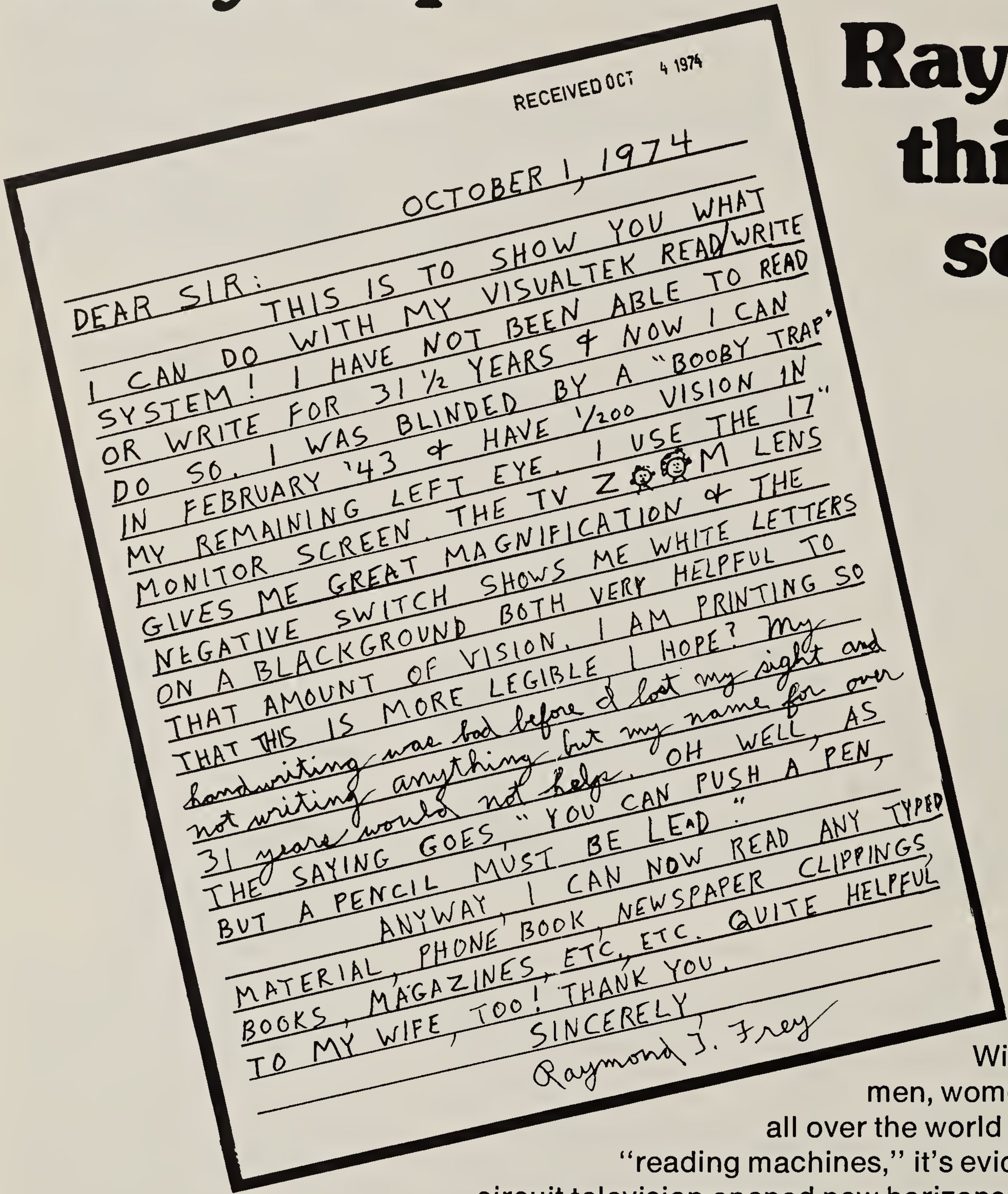

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News in Brief

- Alistair Cooke's prize-winning *America* is now available in a four-volume braille edition from the Scottish Braille Press, Craigmillar Park, Edinburgh, EH16 5NB, Scotland. Each volume of the four volume set is £2.

- The administrative office building at the Arizona School for the Deaf and Blind has been renamed the Tillinghast Administrative Center in honor of Dr. Edward W. Tillinghast who was superintendent of the school from 1941 to 1974. Dr. Tillinghast is presently professor of special education and associate coordinator of the teacher preparation program for the deaf at the University of Arizona.

- In honor of the 150th anniversary of the invention of braille (1825-1975), UNESCO is preparing a state of the art book on braille which is tentatively scheduled for publication in 1977. The International Council for Education of Visually Handicapped Children is responsible for researching and writing the book, tentatively titled "Braille as a Reading Medium."

- The topics for Scandinavian Summer Seminars 1975 are "Scandinavian Education," "Special Education in Scandinavia," and "Early Childhood in Denmark." The seminars, which will be conducted in English, will take place in July and August. For more information and detailed programs, write Det Danske Selskab (Institute for Information about Denmark and Cultural Cooperation with Other Nations), Kultorvet 2, DK1175 Copenhagen K, Denmark.

- Disabled New Yorkers have been invited to participate in the evaluation of the prototypes of "Transbuses." The "Transbus," developed under a grant from the U.S. Department of Transportation to provide greater accessibility to surface mass transit systems, has wider doors, ramps and hydraulic lifts for wheelchairs and semi-ambulatory passengers, and a public address system for blind persons.

- *Inner Views,* a cassette magazine for young readers, has begun publication. This new recorded magazine includes news, record reviews and interviews with pop recording stars, an advice column, and a readers' views section. To obtain a copy of the first issue, send $1.00 and a 60-minute blank cassette to Dennis Holter, Editor, *Inner Views,* 2811 Fair Park Boulevard, Little Rock, Arkansas 72204.

Appointments

- Hadley School for the Blind, Winnetka, Ill.: **Dr. Richard Kinney,** president.

- The Lighthouse, New York Association for the Blind: **Jack C. Korman,** director-general manager, Lighthouse Industries.

Coming Events

April 16-17 American Geriatrics Society, 32nd Annual Meeting, Miami Beach.

April 20-26 Council for Exceptional Children, 53rd Annual International Convention, Los Angeles.

April 24-29 Association for Research in Vision and Opthalmology, Annual Meeting, Sarasota, Florida.

May 5-8 National Braille Association, 13th National Conference, Milwaukee.

May 21-24 International Association of Rehabilitation Facilities, Annual Conference, Toronto.

May 22-24 International Celebration of 150th Anniversary of the Invention of Braille, French National Committee, World Council for Welfare of the Blind, Paris.

June 8-12 Special Libraries Association, Chicago.

June 15-19 American Medical Association, 124th Annual Meeting, Atlantic City, New Jersey.

June 15-21 American Physical Therapy Association, Anaheim, California.

June 18-20 Association for Education of the Visually Handicapped, North Central Region, Madison, Wisconsin.

June 21-22 International Federation on Aging, Third Conference, Jerusalem.

June 22-27 Tenth International Congress of Gerontology, Jerusalem.

July 20-23 American Association of Workers for the Blind, Biennial Meeting, Atlanta.

July 28-August 1 International Conference of the Joint Council for the Education of Handicapped Children, Canterbury, England.

July 31-August 8 World Federation of the Deaf, 7th World Congress, Washington, D.C.

August 7-9 Association for Education of the Visually Handicapped, South Central Region, Little Rock.

September 21-25 American Academy of Ophthalmology and Otolaryngology, Dallas.

September 26-27 Association for Education of the Visually Handicapped, Middle Atlantic Region, Wilmington, Delaware.

Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display—$13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, *15 West 16th Street, New York, N.Y. 10011.*

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Instruments, Recreation Equip. Sound or print catalog. Science for the Blind Products, Bala-Cynwyd, Pa. 19004.

CATALOGS

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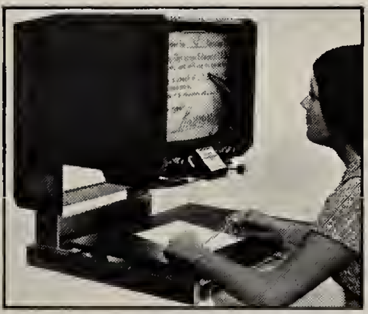

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THE NEW Outlook FOR THE BLIND
May 1975 Volume 69 Number 5

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“Round to the left…going up…this is an extra bus
top.” Bus stops at Bottle Lane. “Doors opening.”

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not a bus stop, because the doors did not open…
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“Left…up hill…going to go over Parliament Street
ow…up hill again, a little bit to the right.”
Bus stops at Theatre Royal. “Waiting again, but the
doors are closed, so it must be traffic lights…round
o the right…round to the right…traffic lights again.
You cannot hear a lot outside on these buses.”
Bus stops at the Victoria Centre and subject gets off.

THE NEW Outlook FOR THE BLIND

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Comprehensive Care Services for the Young Child Who Is Visually Impaired

PAULINE M. MOOR

Miss Moor was formerly specialist in child development with the American Foundation for the Blind. She is currently a consultant in child development in service to young visually impaired children and their families.

ABSTRACT: The preschool visually impaired child and his family are in need of a variety of services in areas such as health and medicine, psychological and social services, and education. The purpose of a program of comprehensive care is to ensure the provision of all services that are needed at each stage of a child's development to promote healthy growth and functioning. This can be achieved only through a willingness on the part of all community agencies to work together. A case coordinator from one of the agencies accepts responsibility for making sure that child and family are put in touch with all necessary services and that everyone involved has the same treatment objectives. Part I of this report deals with comprehensive care as a concept and describes a theoretical model program. Part II is concerned with two pilot projects, one in rural New Hampshire and the other in urban Minnesota, that show how existing resources can be used in developing a comprehensive care program. It is hoped that programs of comprehensive care will be used not only with the visually impaired but with other groups as well.

This report is concerned with the concept of comprehensive care as an ideal system of providing complete services to the visually impaired—and often multiply handicapped—child and his family and how this concept can become reality. Its purpose is to suggest an approach or way of serving the child that will best promote his developmental capacities, especially in the vital preschool years. It is an approach that recognizes the importance of understanding the many special needs of both child and family and allows the services to change with the needs of the growing child.

Concept and model

Demonstration projects

Part I explains comprehensive care as a concept and how a comprehensive care plan can be developed, using the general and specialized agency services already existing within the community. It presents a theoretical model of comprehensive services, in which different service systems are employed to meet individual child and/or family needs at critical times. Part II shows the process by which this theoretical system was brought into being in two pilot projects sponsored by the American Foundation for the Blind, one in rural New Hampshire and the other in urban Minnesota (St. Paul and Minneapolis). These demonstration projects did not set up a new system of services but attempted to show how existing state and local resources could be used in the delivery of comprehensive care services to children with special needs.

PART I

The Concept

☐ Any service that fosters, protects, and promotes the development of a young child is a care service. The program of which the service is a part is considered "comprehensive" when it is aimed at whatever may be needed at a particular stage of the child's growth in order to help him attain his optimum development and functioning. Although the concept of comprehensive care is not necessarily new, what is new is the application of this service system to the child with special needs. Whereas in the past emphasis has traditionally focused on the disability, there is now a problem-oriented approach that, because there may be problems in several areas, requires services from many different disciplines and resources.

Coordinated services

Comprehensive care, then, involves coordinated, interrelated action on the part of community services directed to the child and his family. It presumes the existence of a case coordinator or advocate who is responsible for making sure that everyone who is involved with the child knows his problems and needs and the goals and treatment objectives to which each of the services is contributing.

Wheel of Services

☐ There is no one delivery system of services but rather many systems in which the child may participate, depending upon his individual needs at a particular point in his growth and development. Therefore the comprehensive care program is not a static system but a wheel of systems. In the wheel are all the services offered at local and/or state levels. As children grow and their needs change, the wheel of systems must be able to move along with the emerging needs and capacities of the child, coming to a stop at that point where there is a recognized need.

Model

☐ Ideally, comprehensive care begins with the mandatory reporting of visual impairment to an appropriate state agency that, in addition to maintaining a registry of blind persons, secures information concerning both the child's medical condition and pertinent family data for the benefit of the persons to whom the child and family may be referred for services. If this state agency does not itself provide a case coordinator, it should refer the family directly to an agency that does.

The Case Coordinator

☐ Both parents and child need a variety of services and counseling in areas such as health and medicine, social services, and education. There must be a professional person who can help the family recognize the problem areas and refer them to the appropriate resources. The case coordinator must see that at whatever point the child may happen to enter a service system, he is put in contact with all appropriate services. He must also follow through on the services the child and family receive and accept accountability for their welfare. When a child is referred to a particular agency for a service—or "transferred" from one delivery system of service to another—the coordinator makes certain that all pertinent information is made available to the new agency. If he himself does not remain responsible for child and family, he ensures that accountability has been accepted by someone else.

Qualifications

The case coordinator must be someone who, in addition to having knowledge of available resources, possesses both a basic understanding of child development—and the effects of visual impairment on this development—so that he can properly assess the needs of the child. He must also possess the counseling skills to deal with both children's and adults' problems and be able to act as coordinator of the team of professionals and paraprofessionals who work together to develop a total care plan for family and child.

Care Planning Team

☐ The team that is responsible for carrying forward the care plan may include the physician and/or ophthalmologist, and persons providing social, psychological, educational, and health services. Since each member of the team

Anita: A Case History

Without Comprehensive Care

☐ Today the majority of states have no mandatory reporting laws although the physician who makes the diagnosis will usually report his findings to whatever state agency keeps the registry. Either the physician himself or the state agency will then refer the family to an organization offering special services. The child has entered one of the delivery systems of service, but where comprehensive care does not exist, there is no assurance that the full spectrum of services will be made available. The following case history illustrates what can easily happen when there is no plan and no one person or organization responsible for the total care of family and child.

Anita

☐ Anita was a first child. Since there was early identification of severe visual loss, when the baby was only three weeks old, her mother called the local office of the State Division of Welfare to inquire about services to a new-born baby with congenital cataracts. Although the family's income at that time was estimated as very modest, the mother was told that they did not qualify for assistance from that department but that she would be referred to the Division of Vocational Rehabilitation, Blind Services.

Agency correspondence

During the following eight months, correspondence was exchanged between the Division of Vocational Rehabilitation, Blind Services and the State Sight Conservation Program, where again the family was found to be ineligible for financial assistance. The family was referred to a university teaching hospital for further diagnosis and treatment. At nine months of age Anita was diagnosed as having a heart defect as well as the congenital cataracts. It was recommended that the cataracts be removed if and when the cardiac condition permitted, and the operation was performed three months later.

First efforts

Anita came to the attention of the State Department of Education, Division of Special Education when she was 19 months old, and there followed periodic visits by a preschool teacher for the purpose of discussing questions that the mother had in relation to her little girl's development. Guidance suggestions were offered in such areas as the teaching of self-help skills, motor development, and response to new situations and experiences. These visits represent the first efforts of an agency reaching out to serve the child: all other efforts had been on the part of the parents to enter a system of services.

Typical case

This case is typical of the process by which a child enters a delivery system of services. When the mother asked for assistance, there was immediate concern on the part of the agencies, but all efforts were directed toward establishing eligibility for financial aid. Thus for a period of some months, during which both baby and parents were going through a critical period when they could have benefited greatly from services, they received no assistance. The case also illustrates how service systems may communicate with each other without contacting the family while they are doing so. It is also significant that it was the parent of the child who had to make the initial contact with the service system.

provides a service that is necessary for the child's total development, they must work together with the common goal in view. They must be available to confer regularly with each other and to act as consultants to the case coordinator. Team members are kept informed of the child's and family's changing needs and make referrals as the problems dictate.

Services

What constitutes comprehensive care?

☐ What constitutes complete service for the visually handicapped child and his family? What are their needs? A family may, for example, require assistance with medical expenses, transportation, family counseling, instructional guidance in relation to the child's early care, assessment of the child's functioning and capacities, and perhaps some form of day care to offer the family some respite from continued care of the child.

Existing services

Although quality and availability of services differ from community to community, and in some cases there cannot be comprehensive care until new resources are established, certain areas of service do generally exist throughout the country. Currently available services that should be included in the service "wheel" are discussed below.

Health services

Health Services: The concept of health care has been expanding in recent years from a focus on treatment of disease to one of prevention of disease and promotion of good health. It can begin with genetic counseling to determine a couple's likelihood of producing a healthy child. General health services to children include: screening for problems such as visual, hearing, and motor defects; care and treatment; immunizations; and such related services as nutrition consultation. Parents are encouraged to take their children for periodic physical examinations.

Medical services

Medical Services: These services are available not only through the private sector but also through such public resources as Maternal and Child Health, Crippled Children's Services, and public health programs that include child development clinics. Medical care is available to a large number of high risk, high priority children and youth in "needy" families, who qualify for aid through Medicaid.

Social services

Social Services: Counseling, a major social service, is conducted by a trained social worker. Often both the child and the family as a unit require counseling services. Counseling with parents is based on knowledge of interpersonal relationships and the effects of a handicap in some member of the family upon the family constellation. Instructional guidance is often a part of this counseling. Another form of social service is financial assistance: many families incur heavy medical expenses as a result of the child's visual problem or other handicaps.

Educational services

Educational Services: Many states have a special preschool service for visually handicapped children where a person trained in early child development offers instructional guidance to parents. (This educational service may be based in another delivery system, such as social services.) Some direct teaching of the child is usually a part of the program. The teacher also demonstrates techniques to the parents and often provides equipment that can be kept in the home for the time the child needs to use it. This preschool teacher is able to judge the child's readiness for a group experience and often assists the family in selecting an appropriate early educational program, i.e., nursery school, Head Start, day care programs, Sunday school. Parents are encouraged to use regular early childhood educational facilities whenever possible since the visually impaired child benefits greatly from contact with sighted children at this very early age.

Education legislation

Each state has its own legislation whereby educational services must be provided to educable handicapped children. Minimum and maximum ages at which education is mandatory vary, with a few states recognizing the need for services beginning at birth. Some states have what is known as "permissive" legislation regarding children too young to meet the minimum age requirement for mandatory education: the state may provide services when there is a request for them and where there is a recognized need.

Specialized services

Specialized Services: At national, state, and local levels there are a variety of agencies that concentrate on services directed to the disability itself. These agencies have, or ought to have, specialized information and knowledge pertaining to all aspects of service needs. When the agency itself cannot meet these needs, it should be able to refer the individual to the appropriate agency in the service delivery system.

Other agencies

Because most of today's visually handicapped young children also have other handicapping conditions—in many instances more of an impairment to the child than the blindness itself—they may receive services not only from agencies for the blind but from other specialized delivery systems as well. Where comprehensive care exists, the agencies understand each other's roles in terms of the total care plan that has been specifically developed for the child and his family.

PART II

Pilot Projects

☐ That comprehensive care can be made workable, using existing community resources, was demonstrated in two pilot projects sponsored by the American Foundation for the Blind, one in rural New Hampshire and the other in urban Minnesota. What was learned from these projects can be applied to any community with little adaptation.

New Hampshire

New philosophy

Proposal

☐ When the New Hampshire project was initiaited, the known population of children with visual impairment in the state totaled 226: 140 in day school programs, three in residential settings, 60 in the state school for the retarded, and 23 children of preschool age. Although the number of known blind preschool children was small, there was an interest in developing more services to prepare them for educational programs when they were older. (In fact, during the preceding two years there had been many changes in the state's educational philosophy and, correspondingly, in the educational system itself. Children who had for many years been sent to an out-of-state residential school for the visually impaired now primarily attended day programs in their own communities.) When the author (at that time the specialist in child development of the American Foundation for the Blind) met with directors and representatives of various government and voluntary agencies, there was a unanimous positive response to the proposal of a state-wide project to provide comprehensive care to the young child who is visually impaired.

Committee meetings

The agency directors were then invited by the American Foundation for the

Blind to meet for the purpose of discussing the multi-discipline, multi-agency program. (This group, which became known as the New Hampshire Preschool Planning Project Committee, has continued to work together with some change in the composition of members.) In the course of the following months, this committee met six times, conducted two regional symposia on comprehensive care services, and formulated the comprehensive care plan that is currently in operation.

The children

As the group first began to work together, the discussion turned to means of identifying and locating the visually handicapped children of preschool age. Although an early assumption had been that in a rural state they might be quite scattered, the current census showed clusters of children in the larger cities, with comparatively little geographical spread. Much of the reported visual impairment had genetic causes and many of the children had other handicapping conditions.

Service needs

As each person spoke about the services provided by his agency, it was realized that these services were generally related to diagnosis of the disability, needs directly attributed to the handicapping condition, or financial aid and that other needed services were not systematically available. It was also realized that current knowledge of the development of the young blind child was not being utilized. Although the needs of young children and their families were well documented, the agencies were neglecting the infant and preschool child to focus upon services to the school-age child. However, even under this system, the needed services were generally available somewhere; the problem was that there was no systematic plan for making them accessible. Clearly, a plan for comprehensive care was needed.

Discussion

The current New Hampshire model came about only as a result of close cooperation and many hours of discussion among members of the Preschool Committee, a majority of whom also attended and were influenced by an eight-week course in child development offered by the Harvard School of Public Health. Initially much time was spent interpreting comprehensive care, using a model from the Children and Youth Project under the Bureau of Maternal and Child Health, and becoming aware of the resources available in the community.

Regional symposium

A regional symposium was held for all agencies in the area serving young children. People not only became acquainted with the various agencies but also had the services of each discipline in a comprehensive care program explained to them in an orderly sequence. Unfamiliarity with the concept was evident. As one observer noted, "some people went home disappointed" for they thought the day's program would be dealing with the blind child as a clinical entity.

Participation

After this introduction to comprehensive care, a second regional symposium focused upon an "index child," a child with severe visual impairment. Not only did state and local service agencies share in the program, but parents actively participated and were recognized as an integral part of the delivery system of services. The New Hampshire plan for preschool children was now on its way and energies were being directed not only to advocacy roles, but to accountability, follow-through services, and a system of record keeping.

The Program Today

☐ The New Hampshire program essentially follows the model for comprehensive care suggested earlier in this report. In this case it is the Division of Special Education of the State Department of Education that has major responsibility or accountability for the preschool (defined as "birth through age six") handicapped child. A specialist in preschool education, an occupational therapist, and a psychologist devote a total of five full days a week to preschool children. A full-time case coordinator receives all information pertaining to the child and family and as special needs arise, contacts the appropriate service agency. The coordinator is also responsible for making certain that all the necessary information appears on the record form so that the file becomes a resource for anyone working with the child.

Review boards

Gathering information and evaluating the needs of child and family are also a major responsibility of a multi-disciplinary team, virtually a state review board, that generally consists of a pediatrician, a psychologist, a special educator, a social worker, an occupational therapist, and a welfare representative. Since the board plan came into being, the known number of preschool blind children has increased by more than 33 percent, and the age of identification is continually dropping. Many children now being served are under the age of two.

Minnesota

☐ The second part of the pilot demonstration was concerned with services to children in metropolitan areas. Minnesota, the location chosen for this part of the project, is a large state with extensive rural areas as well as a large urban population. The University of Minnesota has contributed in no small measure to the advancement of knowledge and services in many fields, including education and the behavioral sciences, and the Mayo Clinic in Rochester is a nationally renowned medical center. There are also many agencies, governmental and voluntary, offering services at state and local levels. Health and medical services are available through the State Department of Health and the Crippled Children's Services.

Initial inquiry

The American Foundation for the Blind had initially received an inquiry from the St. Paul public school system regarding the development of comprehensive services to visually impaired children of preschool age. Both the St. Paul and Minneapolis public school systems were interested in expanding services to the very young child: services for handicapped children were mandatory at age four, but "permissive" to children who were younger, and it was to these younger children that concern was now being directed. A program including parental guidance, home services by an itinerant teacher, and group experiences in special and regular preschool classes was already being developed in one of the school districts of St. Paul. Minneapolis had applied for funding to extend or expand a model program of services which, at that time, was directed only to preschool children with hearing impairment.

Meetings

Having interested the St. Paul public school system and other agencies in a broader and more comprehensive program of care, the American Foundation for the Blind invited representatives of local and state agencies serving children and families to meet and discuss ways of utilizing existing delivery systems to meet the various needs of the visually impaired child. This group, like its counterpart in New Hampshire, formed a Preschool Committee that met twice during the following year and sponsored an all-day session on comprehensive care to which the appropriate agencies were invited. A later meeting was held especially for parents. One of the first suggestions to come out of these meetings was that something be done about the problem of lack of communication among agencies, and it was decided that information be available from a central source.

The Program Today

☐ As in the New Hampshire program, many aspects of the model described earlier in this report were incorporated into a comprehensive care program. However, in contrast to the New Hampshire system, in which responsibility is accepted by the Division of Special Education of the State Department of Education, in Minnesota accountability rests with the Service for the Blind and Visually Handicapped within the State Department of Welfare, and it is a counselor from this department who acts as case coordinator. As a result of the comprehensive care program, the number of children being served has increased noticeably in both St. Paul and Minneapolis, there is greater communication among all agencies, and many of the Preschool Committee members are now supporting new programs of service to children with other special needs, such as the mentally retarded and the emotionally disturbed.

Conclusion

Cooperation

☐ Neither the Minnesota nor the New Hampshire comprehensive care program could have evolved without a good deal of interagency cooperation and a willingness to work toward mutual goals. Each agency had to be concerned with its own service, yet aware of the overall welfare of child and family and at the same time willing to recognize that one department was ultimately accountable for all services.

Systems collaboration

Because there is no national health program for young children and perhaps because the area of education has received federal attention and financing, there is a trend today for comprehensive care programs to be a part of the public school system, using other systems, such as social services and health, as they are needed. In any case, collaboration among systems is increasingly evident as communities attempt to meet the multiplicity of needs of the visually impaired child and his family and head toward the goal of a complete program of comprehensive care.

New Building to be Constructed by AEB

Arkansas Enterprises for the Blind (AEB) has been awarded a grant of $240,000, under the Hill-Burton Act, for the construction of a three-level building. The grant, which will cover one third of the projected cost of the building, was approved by the Hospital Division of the State Health Department and by the Public Health Service, U.S. Department of Health, Education, and Welfare. The new building will house an expanded physical conditioning area, snack bar, psychosocial service, mobility office, and library.

Early Childhood Services for Visually Impaired Children: A Model Program

ROSEMARY O'BRIEN

Ms. O'Brien is project director and supervisor, Vision Services, Montgomery County (Maryland) Public Schools.

ABSTRACT: A program of services for young visually impaired children and their parents, including diagnosis and intervention strategies, was established with a three-year grant under Title III of the Elementary and Secondary Education Act in the Montgomery County (Maryland) Public Schools. The program includes a full spectrum of educational services for the children and counseling and training for the parents. Based upon independent validation by the U.S. Office of Education, the project is now a fully-funded part of the vision services provided by the school system and serves as a national demonstration site. Project materials, including assessment booklets, intervention manuals, and a social services document, are currently being field tested in various parts of the United States.

Origin

A program for young visually impaired children and their parents, funded under Title III of the Elementary and Secondary Education Act for a three-year period beginning in 1971, was implemented as a part of the vision services program of the Montgomery County (Maryland) Public Schools. Any child, from birth to school readiness or eight years of age, is admitted if his vision is judged to be sufficently impaired that it (with best correction) may interfere with his successful functioning in school or in his environment. We believe, and the literature supports this belief, that it is extremely important that visually impaired children be given ample time to grow in a richly stimulating and supportive setting until they are developmentally ready for a meaningful and successful school experience. The focus of this early intervention program is to provide a diagnostic and prescriptive program of sensory stimulation and basic experiential readiness. The program includes motor, language, tactual, and basic concept development; utilization of remaining vision; and nurturance of a healthy self-concept by early training in daily living skills, orientation and mobility, and body awareness.

Philosophy

There is sufficient evidence to indicate that the theoretical "compensation" for vision loss does not usually occur automatically. Optimum use of very low degrees of remaining vision and of the additional modalities of hearing, touch, smell, and taste, so vital to the visually impaired child, must be encouraged and trained from infancy on so that each child will reach a level of maximum utilization. Initial diagnostic assessment provides baseline information from which individual developmental levels can be determined and prescriptive program objectives identified. Final assessment determines appropriate referral to existing programs.

Levels of Services

☐ The Early Childhood Program of Services for Visually Impaired Children is divided into three component groups: 1) a parent-infant group; 2) services to children enrolled in private special schools and in day-nursery programs; and 3) the Learning Center program. While these services differ considerably, the primary focus of each remains the same, namely, the child himself, with support to the parents and siblings. In addition, attention is given to the interaction (or lack of interaction) between the child and the members of the family.

Parent-infant intervention

Intervention includes the development of an early, parent-guided program of sensory, motor, language, and social development for the child. Equally important is a counseling, information, and support program for the parents to aid them in their own emotional growth and attitudinal development following the diagnosis of blindness or severe visual impairment. The training of parents in early child development, demonstration home teaching, and parent counseling are provided for the parents and their children from birth to about two-and-a-half or three years of age. These services are provided by a trained teacher of the visually impaired, the program social worker, and the project director.

Counseling

It is essential that assistance to parents include counseling in accepting their child and his impairment, in recognizing his abilities and assets, and in developing realistic expectations for him. It is also important that a feeling of self-confidence in the parents be supported by assurances that they are doing a good job and by the provision of information about early child development, behavior management techniques, and the resources and services available to them. The itinerant vision teacher and the project social worker visit the home on a regular basis, one determined by the readiness of both the parents and the child to profit from these services.

Other programs

Consultative support and demonstration teaching is provided to teachers in private special schools and in day-nursery schools which enroll young visually impaired children, such as the Center for the Handicapped, Maryland Association for Retarded Children, the Headstart program, a Montessori school, and the preschool program run by the Lions Club. There are, in addition, the two classes that meet daily in the Learning Center setting at a public elementary school. Here there is the important advantage of the constant presence of "normal" models, children who do not have identified physical impairments. Children without additional impairments who could profit from a group experience and beginning readiness activities are phased into this group at two-and-a-half to three years of age. Several fully sighted, less mature children from the regular kindergarten are usually included in those activities from which they can profit. This is in keeping with the philosophy of the vision program that visually impaired children should not be isolated if it can be avoided.

Learning Center classes

Instruction

☐ Diagnostic assessment and prescriptive program planning are utilized in order to individualize instruction. While all children participate in an enriching early childhood program under the direction of an early childhood specialist, one-to-one and small group instruction is provided by itinerant vision teachers. Two specialists trained in the education of blind and partially seeing children share these responsibilities in addition to home teaching for parents and infants and itinerant teaching for children who have moved from the Learning Center into kindergarten or first grade in their neighborhood schools.

Integration

A developmental approach is utilized to train sensory, motor, language, tactual, and basic concept development. Skills of daily living, orientation, body image, and spatial awareness are included as needed in each child's program.

Individual readiness for higher cognitive development is monitored and intervention provided. As these children with visual impairments mature and become ready for larger group kindergarten experiences, they join those classes in the school on a limited schedule. This facilitates full integration and a more positive early adjustment to the mainstream the following year.

Language development

A small class of multiply handicapped visually impaired children, three to eight years of age, participate in an experience-oriented program conducted by a language development specialist. This is best described as a total immersion approach to language. Every experience is a language experience, including all levels of skill development, body image, self-care, etc. In addition to the stated criteria for all visually impaired children enrolled in the Learning Center, children in this group must have, as measured by audiological examination, enough hearing to develop language. The language development teacher functions as a full member of the protect team by providing assessment and training for children in the pre-kindergarten group who suffer from speech and language problems or delays.

Services for Parents

☐ During the first two-and-a-half to three years of a child's life, both he and his parents are pupils in the (often) trial-and-error school of parenting and developing positive affective relationships. Following the trauma of diagnosed severe visual impairment or blindness, it is essential that professional intervention in the form of counseling, education, and information be made available to the family. It is the duty of the project staff to define an educational program for both parent and child which allows flexibility for utilization of other interdisciplinary specialists. These may include the school medical advisor, physical therapist, psychologist, or others.

Goals for parents

Specific goals for parents include: 1) development of competence and confidence in caring for their visually impaired child; 2) acceptance of the handicap, including an understanding of the specific eye condition and its implications for efficient functioning and learning; 3) participation in parent discussion and training groups and in broader school activities; 4) development of an understanding of various techniques and approaches to child management, e.g., communication skills based on Parent Effectiveness Training (P.E.T.); 5) realistic and loving acceptance of the child; and 6) formulation of realistic goals for the child. Study groups for parents are held one morning each week and many include observation and discussion of the Learning Center program, courses in various behavior management techniques, or lectures and demonstrations by volunteers and invited consultants.

Parent training

A basic premise underlying the parent training program is that many approaches to behavior management should be taught in order to develop a repertoire of useful skills. In these classes with other mothers from the Learning Center and from the regular school population, the focus is on skill development. Parents are encouraged to discuss their experiences and to practice the application of skills learned to resolve problems and conflicts. An important advantage in including mothers from the regular school population is the growing realization by Learning Center mothers that their children share most behavior patterns and problems in common with other children who have no physical impairment. This is a valuable device for teaching early acceptance of the fact that all problems cannot be attributed to vision loss.

Determination of services

Intervention in each case, including the specific instructional program, the schedule of home visits, and the amount and kind of parent participation and counseling is dependent upon: 1) the child's functional use of any residual vision; 2) his orientation to and interaction with his parents and his environment; 3) his social development; 4) his need for further assessment; and 5) parent readiness for contact with services.

Project Validation

☐ In April 1974, as the project neared completion of its third year of operation under Title III, it was referred by Maryland State Department Title III officials to the U.S. Office of Education for validation. A team of out-of-state validators subsequently judged this project innovative, exemplary, and worthy of national dissemination. In addition to the validation of the stated objectives, the project received high ratings for its approach to early intervention for both parents and children, parent training in various methods of behavior management and other social services, implementation of an intensive diagnostic and prescriptive program in the Early Childhood Learning Center, provision of a total language experience program for multiply handicapped blind children, and provision of appropriate assistance to nonpublic schools which enroll children with visual impairments.

Awards

In July 1974, the project received an Educational Pacesetter Award from the National Advisory Council on Supplementary Centers and Services. Mrs. Inez C. Eddings, chairman, presented the award because of the project's success in areas relating to innovativeness, pupil achievement, cost effectiveness, and program administration. This was followed in December 1974, by an Excellence in Education Award from the National Association of State Advisory Council Chairmen. In making the award, Mr. Rosco Shields, Jr., chairman, described the project as a nationally significant innovation which holds the promise of revolutionizing patterns of contemporary American education.

Effects of validation

As a result of the validation team report and of the documented success of the project, the Montgomery County Board of Education assumed full funding of all staff and services on July 1, 1974. This action phased this model program into the mainstream of education in the public school system. Services for visually impaired children (K-12) have been offered in Montgomery County since 1954. Another effect of the validation report was the decision of the Maryland ESEA, Title III State Advisory Council to provide a fourth year of funding to establish the project as a national demonstration site. This was done to field test the instructional approaches utilized in the program and to provide on-site training for interested professionals.

Field Testing

☐ Since so little is available in the literature for assessment and intervention below age three, project staff has worked diligently to identify, define, and develop assessment measures and objectives appropriate for early developmental levels. Our goal was implementation of a valid early childhood education program with defined intervention for special needs. Efforts were made to review, refine, and compile assessment measures in order to develop or adapt any instrument(s) that would be comprehensive and that would not exclude a handicapped child, especially one with a visual impairment. The second step was an ongoing review by staff of all available curriculum materials and suggested approaches to intervention. Until recently, little was available below kindergarten level. Except for certain areas, e.g., language stimulation and motor development, little intervention has been found for ages birth to four years. As a result, applicable materials and approaches were compiled and at least one suggested lesson plan or intervention was written by staff for each objective when nothing useful was available.

Booklets and manuals

It was never part of the project plan to field test or publish any materials and this suggestion was met with some consternation by the project director and staff. Defined objectives included in somewhat voluminous curriculum binders had been selected or developed for application to our small population and to individual needs within it. The position of the Title III committee that future attempts to replicate this model of services should not be hampered by staff having to go through the same difficult early steps to define the program was a reasonable one. With all possible speed, two assessment booklets (birth to three years and three years to school readiness) and matching intervention manuals were prepared. The assessment format for objectives provides a diagnostic checklist to identify appropriate intervention which is presented in detail in the intervention manuals. An additional social services document including objectives, rationale, suggested activities, and assessment strategies was prepared for use at sites participating in the field testing.

Testing Sites

☐ Because of funding realities, it was necessary to plan within a one-year time-frame for completion of the fourth year objectives. This was noted as an unrealistic constraint from the outset. Currently, project materials have been presented to teachers and administrators for field testing in Allegheny County and Philadelphia, Pennsylvania; DeKalb County, Georgia; San Diego, San Jose, and San Francisco, California; and at the Utah School for the Blind in Ogden. They are also being used throughout Texas by the Texas Commission for the Blind, by the University of Texas at Austin in its Early Childhood Centers, by the Texas model Early Childhood Project in Galveston, and by special classes and centers for the handicapped in Dallas, Houston, and San Antonio.

Returns

Because the incidence of severe vision impairment is low (especially those identified in the preschool years), it has been necessary to include many sites. The minimum number of children needed for the validation study is at least 100 with visual impairments, 100 with multiple impairments, and 200 without impairments. It is hoped that returns will exceed these minimum numbers. Post-assessment booklets will be returned in June 1975 and, upon completion of the statistical analyses, a final report will be prepared. Needed revisions and refinements, including suggestions from teachers involved in the field testing, will be made and the documents will be prepared for publication and distribution in 1975-76.

Conclusion

☐ The prospect of compiling and assimilating ideas, including the expertise of some of the nation's finest teachers in the field from coast to coast, is an exciting and tremendous prospect. Whatever the finished document may be, however, it must be remembered that there is no "cookbook" approach to meaningful intervention with parents and children. In every instance the instructional strategy suggested is always and only *one* way of working toward an objective. While creative and dedicated teachers do not have time for curriculum development during a busy school year, they will ultimately use any curriculum manual as a resource or perhaps a beginning. If this final document serves that purpose in any setting, its goal will be realized.

For the future

The Montgomery County Title III Early Childhood staff anticipates an ongoing, fluid approach to meeting the needs of young visually impaired children and their parents. It has been gratifying to have this model of services identified by many as appropriate for all young children. If it provides direction and assistance for educators and parents in other school systems to meet the needs of young children with visual or other impairments, it will have been a job worth doing. (Because Montgomery County has an excellent preschool program for hearing impaired children, specific intervention for this population is not included, i.e., signing and speech reading.)

New Standards for Physical Facilities Issued by NAC

The new revised edition of the Standards for Physical Facilities has been published by the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped (NAC). Four major changes have been made in the standards: 1) a new section on planning for renovation and new construction in order to conduct programs more effectively; 2) a new section on evaluation to stimulate agencies to assess the extent to which physical facilities contribute to the achievement of the agency's objectives; 3) expanded emphasis on involvement of users of services and other community groups in the planning and use of facilities; and 4) updating to reflect relevant legislation and developments in the fields of health, safety, and removal of architectural barriers.

Participating in the development of the revised standards were accredited and non-accredited agencies, local consumers, special interest groups such as the American Institute of Architects, members of the committee which developed the original standards, and a wide variety of leaders in the field. Copies of the revised standards are available at one dollar each from the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Suite 1406, 79 Madison Avenue, New York, N.Y. 10016.

Comprehensive Low Vision Care: Part Two

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ABSTRACT: Between July 1970 and July 1973, a total of 1,118 patients were seen at the Vision Rehabilitation Clinic, a part of the Gundersen Eye Clinic, Boston University Medical Center. The visual function of approximately 75 percent of all patients was significantly improved with visual aids and counseling. This high rate of success was the result of innovative programs of social service and counseling integrated into a multidisciplinary approach to low vision care. Although operating the clinic in a hospital setting results in high overhead, the participation of residents in ophthalmology in the activities of the clinic was found to be so important as to warrant its continuation there.

In Part One of this article, published in the March 1974 issue of the *New Outlook*, the history, goals, staffing pattern, and overall philosophy of the Vision Rehabilitation Clinic, a part of the Gundersen Eye Clinic, Boston University Medical Center, were described. Other topics discussed included the impact of society on the visually handicapped patient, the importance of the patient's assuming responsibility for his own rehabilitation based on an adequate understanding of his diagnosis and prognosis (Cholden, 1958), the prescription of low vision aids by the examiner after careful evaluation and trial through a loan system, and the clinic's student training program. In Part Two, the focus will be on an analysis of the 1,118 new patients seen in the clinic between July 1970 and July 1973.

Rate of Rehabilitation Success

☐ During the first year, July 1970 to July 1971, 363 new patients were seen and 60 percent of them were successfully rehabilitated. During the second year, there were 346 new patients, of whom 80 percent were successful. From July 1972 to July 1973, 409 new patients were seen and 81 percent of them were rehabilitated. Successful rehabilitation involving the use of low vision aids means that at least one of the following criteria was met: 1) success with occupational needs; 2) success with recreational needs; 3) success with both occupational and recreational needs; 4) partial success—able to perform additional meaningful tasks, but still dependent upon others for most activities; 5) better overall performance in school; 6) transfer to sighted classes; 7) kept job because visual needs were met; 8) got new job because visual needs were met; or 9) able to maintain independence as a homemaker.

Age and rehabilitation

Ten percent of the new patients seen during this period were 16 years old or younger, 50 percent were 17 to 64 years of age, and 40 percent were 65 or older. In the first group, 88 percent were successfully rehabilitated, in the sec-

The program of the Vision Rehabilitation Clinic was made possible through the generous support of Grant No. 25-65082/1-03, 1970-1973 and Grant No. 36-P-05k50/1-02, 1972-1975 of the Rehabilitation Services Administration, Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare.

ond 74 percent, and in the third 81 percent. These figures suggest that younger persons adjust more easily to devices than do the other age groups. The criteria for successful rehabilitation for the middle group are, however, more rigorous (involving maintaining a job, going to college, etc.) and these individuals have greater rehabilitation needs. The occupational needs of the older patient are less rigorous. We have attributed our relatively high overall rate of success to the integration of intensive counseling with the careful prescription of aids (Friedman, Tallmann, & Asarkof, 1974). When patients and their families are knowledgeable about their diagnosis and prognosis (Cholden, 1958), when they have been able to vent their feelings about visual loss (Wolff, 1969; Schoenberg, Carr, Peretz, & Kutscher, 1970), when they have actively taken responsibility for determining what they want to do with their remaining vision, and when the members of the Vision Rehabilitation Clinic staff have the patience, skill, and tact to work effectively with patients as well as with other involved professionals and agencies, then a satisfactory improvement in the lives of individuals with low vision can occur.

Paying for services and aids

Many of the patients seen in the clinic have third-party coverage of the fees for services and devices through Medicaid, Medicare, vocational rehabilitation (Massachusetts Commission for the Blind and Massachusetts Rehabilitation Commission), veterans benefits, private medical insurance, and other social insurance. In fact, 65 percent of the patients 17 to 64 years of age were so covered. On the other hand, only 39 percent of the younger group and 35 percent of the older group had such third-party coverage. This means that the expenses for low vision services are greatest for parents and for the elderly—those least able to afford them.

Other Data

☐ Of the 1,118 patients seen in the clinic, the records of 827 were sufficiently complete to be processed by computer for additional descriptive data. It was assumed that the 827 patients are a reasonably representative sample. Of the 827, 430 were male and 397 were female. The proportion of males and females in the different age groups varied significantly. In the group 19 and younger, there were 64 males and 43 females; 20-39, 124 males and 76 females; 40-59, 77 males and 66 females; 60-79, 97 males and 126 females, and 80-99, 68 males and 86 females.

Sources of referrals

Referrals to the Vision Rehabilitation Clinic were predominantly from ophthalmologists (43 percent) and the Massachusetts Commission for the Blind (34 percent). Other sources of referrals included the Massachusetts Association for the Blind (four percent), Massachusetts Rehabilitation Commission (less than one percent), other social agencies (ten percent), optometrists (one percent), and self-referral (eight percent).

Occupational status

Of the patients seen during this period, 27 percent (216) were of preschool age, ten percent (78) were students, 26 percent (203) were working, 19 percent (149) were homemakers, 17 percent (139) were retired, and one percent (10) were unemployed at the time vision was lost. Sixteen percent (127) reported a change of occupation resulting from visual loss, while 84 percent (668) did not. Of the 16 percent whose occupational status changed as a result of their visual loss, 86 percent had been working beforehand.

Low vision aids

Roughly two-thirds of these patients were given one or more low vision aids; for near vision, 36 percent received a reading glass with an average strength of 16 diopters, 16 percent bifocals (15 diopter average), 18 percent microscopes (24 diopter average), 27 percent hand magnifiers (28 diopter average), seven percent stand magnifiers (22 diopter average), five percent loupes (18 diopter average), and six percent a previous aid (17 diopter average). For distant vision, 12 percent received mounted telescopes (14 diopter average) and 21 percent hand telescopes (25 diopter average).

Of these 827 patients, 95 percent indicated that they had had poor vision for more than six months prior to seeking low vision care. Based on the relationships among age, occupational status at the time of visual loss, and the duration of visual loss before seeking low vision care, it appears that, tragically, many of our patients needed low vision care many years ago.

Visual acuity

The distance visual acuity in the better eye of these patients was 10/10-10/20 for 27 patients, 10/20-10/44 for 124, 10/44-10/68 for 81, 10/68-10/97 for 131, 10/97-10/137 for 153, 10/137-10/200 for 102, 10/200-5/200 for 65, 5/200-1/200 for 131, and no measureable vision for ten patients. No data was available for visual field defects, so that the total number of legally blind patients could not be determined.

Diagnoses

The major diagnoses of visual loss in these 827 patients included: ocular albinism (20), congenital cataracts (42), senile cataracts (37), corneal problems, including four keratoconus (41), chorioretinitis (9), coloboma (5), diabetic retinopathy (75), detached retina (6), congenital glaucoma (15), open angle glaucoma, with field loss (30), macular degeneration (248), myopia (33), congenital nystagmus (34), normal, with refractive errors (15), Lebers' hereditary optic atrophy (4), optic atrophy (68), other optic nerve disorders (11), retinitis pigmentosa (45), retrolental fibroplasia (27), rod and cone defects (10), traumatic injury (7), uveitis (4), other retinal problems (22), and miscellaneous (19).

Recent Developments

☐ In July 1973, funding for the clinic was curtailed, forcing the termination of the formal association with and counseling services provided by the Massachusetts Association for the Blind. That agency, however, has continued to provide information and volunteer help. Later in 1973, the Massachusetts Commission for the Blind asked the Vision Rehabilitation Clinic to train their social workers and vocational rehabilitation counselors in the techniques of low vision counseling and to teach them about how aids are prescribed by the low vision examiner. Each of these social workers and counselors remains with the clinic for at least four months, becoming an essential part of the clinic's rehabilitation team. They have also increased staff awareness of the objectives of the state vocational rehabilitation effort and of the programs of the commission in general.

Psychiatric consultant

The Department of Liaison Psychiatry, a part of the Boston University Medical Center's Division of Psychiatry, created the position of psychiatric consultant to the Vision Rehabilitation Clinic. This individual sees patients at the request of our staff and makes recommendations concerning the psychiatric needs of particular patients. The psychiatrist continually reminds us of the important factor of emotional stress in the patient's reaction to his visual loss.

Counseling services

Also in late 1973, the Vision Rehabilitation Clinic initiated group counseling in conjunction with the Division of Psychiatry. This program continues with the addition of a doctoral candidate in psychology who is himself visually handicapped from retinitis pigmentosa. The value of counseling and support to patients from a professional with low vision has been enormous. A first-year graduate social work student also works with the group in addition to providing individual counseling with clinic patients.

Special education consultant

Early in 1974, the staff of the Vision Rehabilitation Clinic sponsored a two-day interdisciplinary course entitled "Rehabilitation of the Partially Sighted." We are planning to publish the proceedings of this course. Later in 1974, a special education grant from the U.S. Department of Health, Education, and Welfare (Grant No. Ed-Ma 75-37, Federal Assistance for the Education of Handicapped Children under P.L. 89-313), allowed us to hire a special education consultant. This individual tries to improve liaison between special education teachers, ophthalmologists, optometrists, and social workers involved in teaching, treating, and counseling visually handicapped children and their families so that these children can be intregrated more effectively within the regular classroom and other activities in the communities in which they live. The special education consultant also works with programs for inner-city minority groups and with an early infant identification and treatment program in an attempt to increase the use of low vision services by these children, a need noted in the "OSTI Report" (Organization for Social and Technical Innovation, 1971).

Professionals With Low Vision

☐ The staff of the Vision Rehabilitation Clinic felt that it would be desirable to have greater participation in the clinic by professionals with low vision. In 1974, we received additional support money from the ABCD New Careers Program to train an assistant social worker who was herself seriously visually limited as a result of retrolental fibroplasia. This work has proved invaluable in identifying for the staff those crucial areas of concern to persons who are struggling with serious visual handicaps, including, for example, what it might be like never to have had good distance vision, never to drive, rarely to be treated as a normal human being. In turn, this worker has learned that having a visual handicap does not necessarily prevent one from having the same stereotypical attitudes toward partially sighted and blind persons as generally exist in society. Her work has helped her to resolve these prejudices.

Our staff improvement programs emphasize the patient's point of view. A young woman blind from diabetic retinopathy spoke to us about losing one's sight (Giarratana, 1975). She stressed how often health care professionals fail to pay attention to the needs of the patient so that such patients often flounder about and are unable to make important decisions because of inadequate or poorly timed information from their ophthalmologists.

Funding

A shortage of operating funds has plagued us from the beginning. With spiraling costs of medical care, all out-patient clinics are allocated overhead charges that make it difficult to sufficiently support salaried personnel. Grants based on innovative programs, along with limited philanthropies, remain our source of support. On-going salary support has not been part of federal or state grants to our service. Because so much time and energy is spent on seeking ways to obtain minimal operating funds, it is difficult to maintain the momentum and quality of care so necessary in the day-to-day operations of a low vision clinic. The proximity and involvement of the ophthalmologist-in-training and his/her teachers is crucial if rehabilitation is ever to be accepted as an essential part of total eye care (Organization for Social and Technical Innovation, 1971).

Attitude Toward Patients

☐ If we remain as a multidisciplinary team (physicians, optometrists, counselors, special educators), respecting each other's professional competence, we may learn to understand the length and breadth and depth of hopelessness that some of our patients experience. Their hopelessness arises not only because they are losing their vision, but also because they or their families are unable to cope with the fears and anxieties that often accompany this loss, or with the gradual realization that their lives seem devoid of any real goal or meaning. As a team, our staff may learn that human illness is rarely the simple result of infection, auto-immune reaction, malignancy, or endocrine or vascular disturbance, but rather a many-faceted monster that is often superimposed on a psyche in torment. Prolonged and expensive medical treatment may eradicate the disease or halt its progress while simultaneously destroying financial integrity and the stability of the family. We must be aware of our patients' torment and pain and understand the terrible disruption that visual loss can create in their lives (Engel, 1973; Reinhard, 1974). Perhaps with humility, understanding, and compassion, the staff and patients together can come to grips with the difficult issues involved in comprehensive low vision care.

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Learning Bus Routes Using a Tactual Map

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ABSTRACT: A new map-making kit was used to produce a tactual map of Nottingham City Centre, including two local bus routes. Four blind adults were systematically taught to use the map and all successfully completed a map-reading evaluation. Finally, with the aid of the map, the subjects traveled as passengers on the buses. Observations confirmed that subjects could maintain an up-to-the-minute record of their geographical position during travel.

Introduction

A tactual map of Nottingham City Centre was produced using a newly devised map-making kit (James, 1975). Plastic copies were produced in Brailon (.008″). Superimposed on this base map by an overlay system (Bentzen, 1972) were two bus routes on separate plastic sheets. A braille introduction informed map readers that buses travel in a clockwise direction. In order to read the maps of the bus-routes in conjunction with the map of the City Centre, subjects were taught to read the bus-route map with one hand and the street map with the other. Both bus-route maps were hinged in a ring-binder in such a way that the relevant map would always appear immediately above the street map (see Figures 1 and 2).

Braille was not included on the top side of the street map; instead, braille initials on the reverse side of the map indicated street and building names (Kidwell & Greer, 1973). Thus, subjects located the appropriate initials and then referred to the alphabetical index at the back of the map book to ascertain the full name. A representative fraction was not used to give the scale of the map; instead it was stated in the introduction that "the distance from the roundabout at the west end of Parliament Street to the Victoria Centre is approximately one-third of a mile (five to ten minutes walking)."

Subjects

Two female guide-dog owners and two male long-cane users acted as subjects. Their ages ranged from 27 to 54 years. Only one subject had perception of light. Onset of blindness varied from the age of seven to 34 years. One subject had never used a tactual map for mobility purposes, whereas the others had used several maps in the Nottingham area. Subjects had some prior knowledge of the City Centre, but had not travelled on the buses previously.

Teaching Procedure

☐ Since the map was complex, involving different classes of tactual information, a systematic teaching approach aimed at gradually building up the map-reader's knowledge from component parts to the map as a whole was adopted. To begin, subjects were given ample time to read the introduction, key, and maps. Initially, help was given to ensure that subjects could interleave the bus route maps and read them satisfactorily. Practice was given in locating the braille initials on the underside of the map. A specific teaching point was made to ensure that subjects made a general tactual scan in order to get an overall impression of the map content. It was suggested that the hands should move in rows, columns, or concentric circles so as not to miss any part of the maps (Berlá, 1972).

Orientation of the map

A check was made on the subjects' knowledge and understanding of the geographical compass points. For example, a typical question might be: "If you are facing east, which directions are north, south, and west?" Instead of the traditional compass "rose," the north edge of the map was shown by a continuous raised and dotted line (Wiedel & Groves, 1972). Making teaching points about map orientation and reinforcing these with examples not only enabled subjects to orient the map efficiently, but also greatly simplified further discussion of map content.

Map content

Following identification of symbols on the maps by reference to the key, subjects were given practice in the use of the braille underlay and indexing system. This permitted a detailed discussion of the relative location of features. Subjects started their examination of map content by reference to easily found location points, such as buildings or roundabouts. After a while they seemed to develop their own preferred reference points; whichever point they used, the general strategy was to start at this point and build up knowledge of the area in the immediate vicinity. Next, another point was chosen and the same exploratory activity proceeded. Eventually areas surrounding such reference points were linked together with the aid of questions formulated to induce the map-reader to consider different kinds of spatial relationships. Discussion of the bus-route maps involved locating and naming bus stops and assessing the direction of travel at given points on different routes.

Evaluation

☐ A map-reading questionnaire was administered to all subjects (see Appendix), and the results showed that the map and associated learning program had been effective in permitting all of the subjects to correctly answer questions requiring symbol identification, naming of streets and buildings, comparing location and distribution of features, and route planning. Once it was established that subjects could read the map effectively it was hypothesized that they would be able to travel as passengers on one of the bus routes with no need for sighted assistance.

Procedure

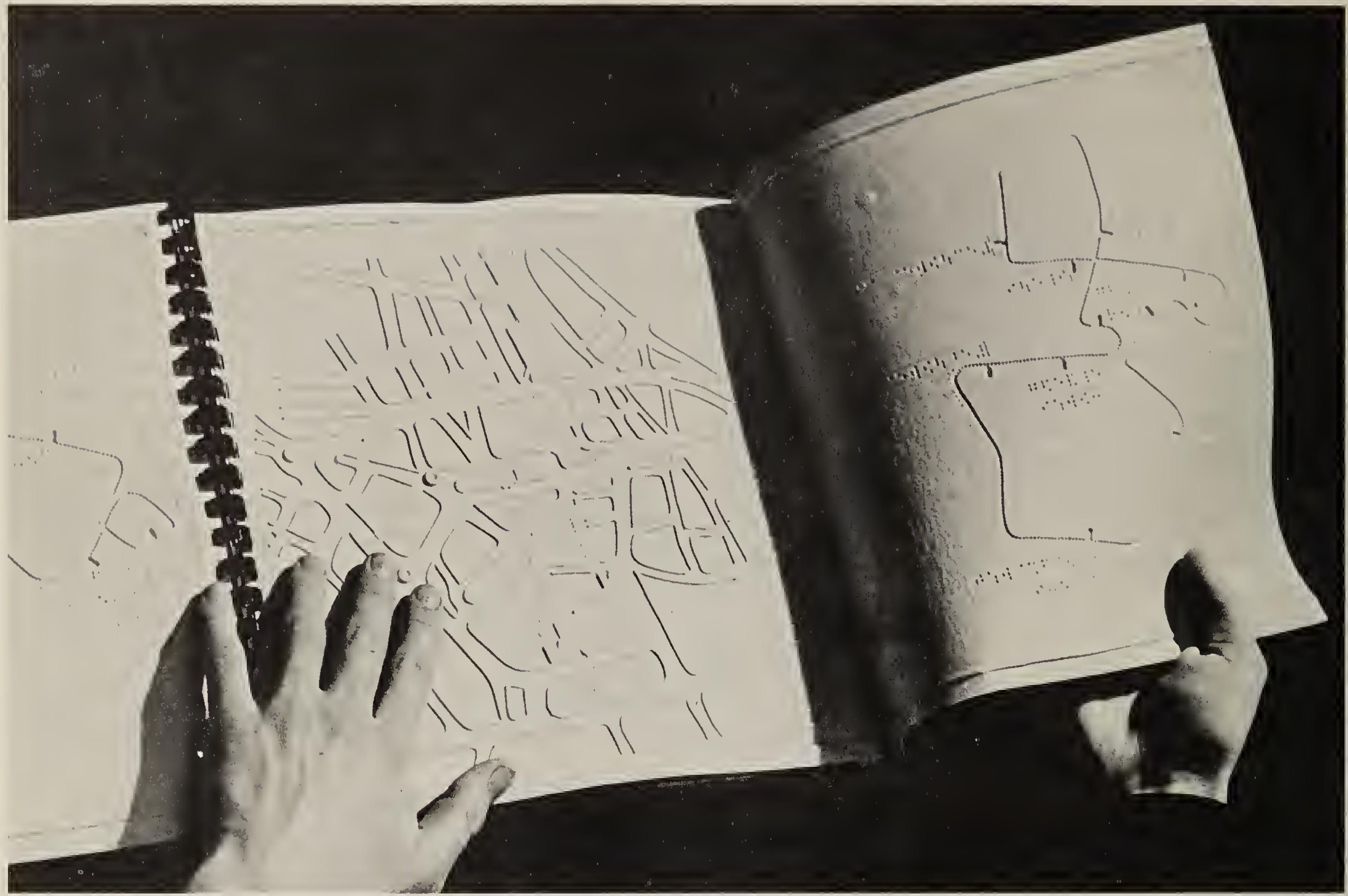
Subjects were instructed to track their route on the map while the bus was travelling. At the same time they were asked to give a verbal description of any environmental cues that gave them up-to-the-minute information concerning their whereabouts on the map. The subjects performance was video-recorded so that information about map-reading and verbal responses could be recorded and analyzed at a later date (Armstrong & Worsey, 1972).

Results

Three subjects followed the bus route from the map with no errors. The fourth became disorientated on the last section of the route because of a right/left reversal. In other words, when the bus turned right, she expected the mapped route to go to the left and therefore became confused.

Subject's Commentary

☐ One subject's commentary during the trip is reported in full. Bus starts at Friar Lane. "Down hill . . . turning to the left . . . bell, that means Broadmarsh next." Bus stops at Broadmarsh Centre. "Doors opening . . . traffic on my right . . . doors closing . . . people have been shopping, plenty of parcels . . . can hear traffic on Castle Boulevard on my right." Bus starts. "Round to the left . . .



going up . . . this is an extra bus stop." Bus stops at Bottle Lane. "Doors opening." Bus starts. "Down hill . . . these are traffic lights, not a bus stop, because the doors did not open . . . turn right . . . still right . . . left." Bus stops at Long Row. "Left . . . up hill . . . going to go over Parliament Street now . . . up hill again, a little bit to the right." Bus stops at Theatre Royal. "Waiting again, but the doors are closed, so it must be traffic lights . . . round to the right . . . round to the right . . . traffic lights again. You cannot hear a lot outside on these buses." Bus stops at the Victoria Centre and subject gets off.

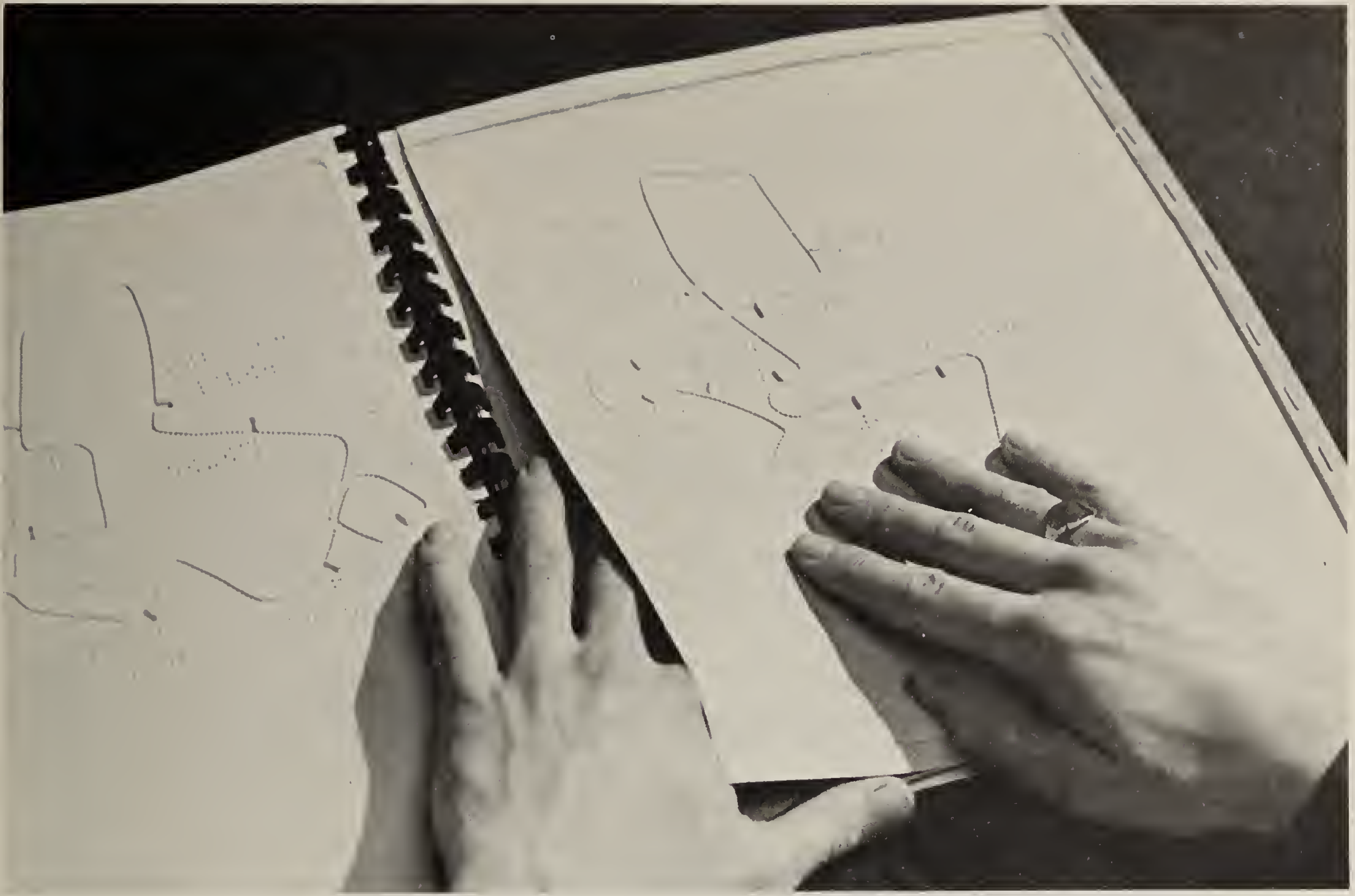
This commentary was typical of those made by all subjects: gradients, turns, doors opening and closing, and the bus stopping all provided ample cues to permit subjects to maintain an up-to-the-minute position on the map. When the bus did not stop at bus stops shown on the map, or stopped at traffic lights or pedestrian crossings, it was easy to monitor possible false cues by listening to the opening and closing of the doors.

FIGURE 1

The Street Map of Nottingham City Centre Showing Streets, Buildings, Roundabouts, and Pedestrian Areas.

Discussion

☐ In contrast to previous research on the use of tactual maps to aid blind mobility (Leonard & Newman, 1970; Bentzen, 1972; James & Armstrong, 1975), the criterion tasks required of the subjects in this study were more passive than usual. It is well known that knowledge of distance travelled is normally pro-



vided by the kinaesthetic sense. For example, Liebig (1933) demonstrated that sighted but blindfolded subjects were better able to orient themselves when initiating their own walking activity than when wheeled about on a trolley. More recent research by Held (1965) emphasizes the role of sensory feedback, or reafference, which accompanies self-produced (as opposed to passive) movement. However, although travelling on the bus was a passive task, the map-reader was actively engaged in monitoring the environmental cues he expected on the basis of information provided by the map. In this sense the map provided "feed forward" which alerted the map-reader to events which would occur. The map-reader, therefore, expected certain characteristic cues and these provided him with ongoing knowledge of results that enabled him to track his position on the map successfully.

FIGURE 2
A Tactual Overlay Sheet Which Allows the Map of the 88 Bus Route to Be Superimposed on the Underlying City Centre Map. The Bus-Route Map Includes Symbols for Bus Stops and Braille Labels to Describe Them.

Conclusion

This study has shown how the use of a map can considerably enhance blind people's knowledge of a city environment. In addition, the map enabled subjects to use a transport system without prior direct experience. Although the map was not intended to provide highly detailed information, the subjects confirmed that it provided a framework upon which information that was gathered from direct experience could be attached. Ideally, subsequent travel in the city would be more meaningful within the context of this kind of reference system.

Fifty copies of the map have been distributed to the Nottingham Social Services Department. In future studies the value of this particular map as part of a program of mobility instruction will be examined. Concurrently, we hope to test the usefulness of the map for a larger sample of the registered blind population in Nottingham.

Acknowledgements

☐ The authors are indebted to the blind people of Nottingham who acted as subjects in this experiment. Mr. N. Ferrier, publicity officer, Nottingham City Transport, kindly supplied the printed maps which were transcribed into tactual versions. This study was supervised by Dr. J. D. Armstrong as part of a wider research program on blind mobility supported by the Medical Research Council and the Department of Health and Social Security.

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Appendix—Evaluation of Map-Reading Skills

1. *Identification of symbols from the map key*
   a. How many buildings are there on the city centre map? (4)
   b. How many roundabouts? (4)

2. *Labelling features by use of the braille underlay and indexing system*
   a. Name the buildings shown on the map. (Victoria Centre, Broadmarsh Centre, the Council House, the Castle)

3. *Spatial distribution and relative location of features*
   a. Name the road immediately south of the Victoria Centre. (Lower Parliament Street)
   b. Name the road immediately to the west of the Victoria Centre. (Milton Street)
   c. Is the Council House roughly north or south of the Victoria Centre? (South)

d. Name the road immediately north of the Council House. (Long Row) Which direction does it follow at this point? (East to west)
e. Which is further south, the Castle or the Broadmarsh Centre? (Castle)
f. Name the road that forms a "crossroads" with Maid Marian Way. (Friar Lane)
g. Which is nearest to the Castle, the Broadmarsh Centre or the Victoria Centre? (Broadmarsh Centre)

Bus route questions

4. *Bus route questions*
a. How many bus stops has the 77 route? (12)
b. How many bus stops has the 88 route? (11)
c. Which bus route extends furthest east to west? (77)
d. Which bus route extends furthest north to south? (88)

5. *Use of bus stop labels and check on route direction*
a. Name the bus stop after the Victoria Centre on the 88 route. (Elite)
b. Name the third bus stop after Long Row on the 77 route. (Palais)
c. Name the common stops for the 88 and 77 bus routes. (Victoria Centre, Theatre Royal, Victoria Street)
d. Which bus route has two bus stops in Long Row? (88)
e. Would the bus stop for the 88 route on the east of Long Row or the west of Long Row be the quickest way to the Victoria Centre? (East)

6. *Putting the bus route maps and the city centre map together*
a. Which bus route goes to the Broadmarsh Centre? (88)
b. Name the *street* where the bus stop called the "Flying Horse" can be found on the 88 bus route. (South Parade)
c. Name the *street* where the bus stop called "Elite" can be found on the 88 bus route. (Upper Parliament Street)
d. Which bus route travels furthest in a westerly direction along Upper Parliament Street? (88)
e. The 77 and 88 routes are identical from the Theatre Royal to the Victoria Centre. Name the streets these routes follow from the Theatre Royal to the Victoria Centre. (South Sherwood Street, Shakespeare Street, Milton Street)

Route planning

7. *Route planning*
a. From Victoria Street, which route would you take for the general hospital? (77)
b. From Victoria Street, which would be the shortest bus route to the Victoria Centre? (88)
c. From the Broadmarsh Centre, which would be the best combination of routes to the general hospital? (Mount Street, 88 and change to 77 at Victoria Street)
d. You are on South Parade in the Market Square and you wish to take the 77 bus to George Street. How will you find the correct bus stop? (Cross to the other side of the Council House on Long Row)
e. At the west end of Upper Parliament Street there is a roundabout. You are facing east on the left-hand side of the road along Upper Parliament Street from this roundabout and decide to take the bus to the Victoria Centre. Which is your nearest convenient bus stop? (Co-op) Which bus route? (77) How many stops? (2) List the direction of turns the bus would make. (Left, right, right)
f. You are walking north along the left-hand side of Maid Marian Way toward the junction of Friar Lane and you wish to go to the Broadmarsh Centre. Which bus would you take? (88) How would you arrive at the bus stop? (Cross Maid Marian Way) How many stops are there to the Broadmarsh Centre? (1)

Meeting the Vocational Needs of the Older Blind Person

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ABSTRACT: The vocational placement of blind persons who are 65 years of age or older presents the counselor with an unusual challenge. The statistical data on the desirability of hiring older workers is reviewed, along with pointers on responding to employers' objections. Older blind persons who desire remunerative employment fall into four groups, each requiring a different level of placement services: minimal, average, sheltered, and special. The relationship of past work experience to new job possibilities is also explored.

As Scott (1969) has pointed out, meeting the needs of older blind persons has not been a priority with the blindness system in the United States. This is particularly true in the vocational area where the problems of providing effective service are formidable, and where concentration on the younger blind produces a higher number of closures for a given investment of time and effort.

Vocational Needs

☐ The fact remains that older blind persons have real vocational needs; in my opinion, there are procedures which, if conscientiously applied, could facilitate vocational adjustment of some of the older blind. In the pages that follow I will give examples of such procedures and suggest ways in which they might be practically applied.

A vocational need, for the purposes of this paper, is defined as one in which ultimate satisfaction requires the attaining of remunerative employment; the total process of achieving this objective might involve a variety of services ranging from physical restoration and training through vocational counseling and placement. The scope of this presentation precludes a meaningful discussion of all of them. Attention will therefore be focused on placement, since this is the service which deals most directly with the process of obtaining remunerative employment, a process which, in the case of most older blind persons, is complex and difficult.

Defining "older"

While the precise meaning of the term "older" usually varies with the person defining it, the term as used here will refer to persons 55 years of age and older, with particular emphasis on those 65 and over. There are two reasons for this emphasis: 1) since, after age 40, there is an inverse ratio between age and availability of employment, other factors being equal, it seems evident that any technique, program, or strategy which will facilitate the placement of persons 65 and over will apply with equal or greater effectiveness to those between 55 and 65; 2) because 65 is the most common age for mandatory retirement in both the public and private sectors, it is assumed that there may be more indi-

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viduals 65 and over who do not have work (but who could and would like to work) than there are between the ages of 55 and 64.

Older blind persons

The legally blind population in the United States is predominantly an older population. In the 1971 report of the National Society for the Prevention of Blindness, it is estimated that two-thirds of all legally blind persons are 55 years of age and older. The figures of the Model Reporting Area for 1970, which are probably more accurate and somewhat more conservative, showed that persons 65 years of age and over comprise 44.5 percent of the blind population in the 16-state area of the study (Kahn & Moorhead, 1973). It might reasonably be inferred from this data that, since persons 55 and over constitute a majority of the blind population, they would be receiving a major portion of available services. While the converse of this proposition has, in fact, been the rule, it appears that the impact of its logic is beginning to be felt and will be increasingly responded to by policymakers in both the private and public sectors.

Amount of vision

With respect to amount of vision, there is slightly less total blindness (absolute blindness, light perception, and light projection) among the older population (65-74), 22.3 percent, than there is among the younger population (20-44), 26 percent (Kahn & Moorhead, 1973). This seems to indicate that slightly more persons in the older population have some useful vision and, other factors being equal, the possession of some degree of useful vision tends to enhance the individual's mobility potential which is often important in meeting vocational needs.

Suitable Employment

☐ Identifying the kind of employment that might be appropriate for different segments of the older blind population is complicated by the fact that data describing the vocational characteristics of this population are not available. There is, however, an adequate supply of statistical information describing the occupational distribution and other vocational characteristics of persons 65 and over in the general work force. A statistical overview of the occupational areas in which older persons are employed should provide us with the basis for making a more enlightened judgment about the kinds of vocational adjustment that might be appropriate for different segments of the older blind population.

Many continue working

We tend to think of persons 65 and over as being retired; in fact, the 1967 Age Discrimination in Employment Act applies only to persons between the ages of 40 and 65. Yet the actual figures tell quite a different story. In 1970, 2,164,000 out of 8,089,000 men 65 and over were in the work force as were 1,056,000 of the 10,907,000 women in the same age .group (U.S. Bureau of Labor Statistics, 1974).

Occupational areas

A frequency distribution of the occupational areas in which people 65 and over work (annual averages of 1971) reveals that among men, managers, officials, and proprietors account for 17.2 percent; farmers and farm managers, 16.3; craftsmen, foremen, and kindred, 12.6; service workers, excluding private households, 11.7; professional, technical, and kindred, 10.8; operatives (semiskilled and unskilled industrial jobs) and kindred, 8.5; sales, 7.6; clerical and kindred, 5.8; nonfarm laborers, 5.6; farm laborers and foremen, 3.3; and private household workers, 0.4. Among women, private household workers account for 18.5 percent; clerical and kindred, 18.3; service workers, excluding private households, 17.3; professional, technical, and kindred 12.5; sales, 9.8;

operatives and kindred, 9.3; managers, officials, and proprietors, 8.9; farmers and farm managers, 2.2; farm laborers and foremen, 2.0; craftsmen, foremen, and kindred, 1.2; and nonfarm laborers, 0.2 (Stein, 1971). Occupational areas in which blind persons have found substantial employment stand at midpoint or above in the rank order distribution of these occupational areas. These are, for men, managerial, service, professional, technical, and operatives; and, for women, clerical, service, professional, technical, sales, and operatives.

Satisfactory performance

The foregoing data demonstrate that age, in and of itself, does not prevent qualified individuals from performing satisfactorily on many of the same kinds of jobs. It is recognized that when both disabilities exist in one person, the complexity, difficulty, and challenge of achieving satisfactory placement in remunerative employment is more than doubled. I believe, however, that for an older blind person who is in good health, who has demonstrated job skills and reliable work habits based on substantial experience, and who is strongly motivated to work, the goal of full- or part-time remunerative employment is not at all unrealistic.

Placement Services Needed

☐ In terms of the placement services needed by the older blind, the following four groups might be identified: Group 1, minimal; Group 2, average; Group 3, sheltered; Group 4, special.

Minimal

Group 1, minimal, is a small but important group of older blind persons who will require little or no help in obtaining employment and who will probably never be seen by an agency. They have demonstrated skills, knowledge, and experience as managers, administrators, consultants, engineers, teachers, and other professional persons. If forced to retire at 65 or earlier and if still interested in working, they have the contacts, the ability, and the prestige to obtain employment in another firm or agency on a job similar to, or perhaps, less demanding than the one from which they retired. Typical of this kind of older person, although not blind, would be the group of psychologists studied by Otto F. Ehrentheil (1964). In this study, questionnaires were sent to 496 older psychologists and 174 usable questionnaires were returned. Since the average age of those responding was 70 for men and 69 for women, it was obvious that many of them had experienced mandatory retirement. Nevertheless, 70 percent of the men and 69 percent of the women were continuing to work full-time or part-time, for instance, as consultants or in schools other than those from which they had retired.

Average

Group 2 requires from moderate to considerable assistance in obtaining employment. It consists of persons who worked in lower-level jobs in the manager/officer/proprietor or professional/technical or sales categories, plus those who worked at any level in the clerical, services, or operative categories. Examples might include assistant managers, supervisors, dark-room technicians, computer programmers, medical transcriptionists, and laundry, hospital, cafeteria, and factory workers.

Sheltered

Group 3 might require some counseling but no real placement service. It consists of older blind persons who are not qualified for or interested in competitive employment, but who would like to supplement their income by working in a sheltered workshop.

Special

Group 4 would definitely be the largest of the groups, in my opinion, and would require some help from the counselor working in cooperation with other agencies as will be described later. Its combined membership represents work experience in a variety of occupations and in a number of jobs. The characteristic which identifies this group is the fact that its members are seeking work primarily as a means of supplementing their pensions, whether these are derived from public and/or private sources. They specifically do not want full-time employment and, in an important sense therefore, their motivation is strictly economic rather than vocational.

In terms of these four groups, it appears that persons in groups 1 and 3 would require minimal, if any, placement assistance. The members of group 2 would seem to require the most service and those in group 4 somewhat less and of a type that will be described later.

Personal characteristics

Before considering specific procedures, it should be reemphasized that owing to the severity of this multiple disability the client must: 1) be in good health, 2) have demonstrated job skills and reliable work habits based on substantial experience, and 3) be strongly motivated to work. It is also true that, other factors being equal, the less severe either or both disabilities are, the greater the chances of successful placement—and the severity of both disabilities may vary significantly. For instance, a 65-year-old client may have the body movements, skin texture, and voice tone which the observer would normally associate with someone 50 years of age or they may be those of a 70-year-old. Similarly, a legally blind client might have no vision or he might be able to read large print with an optical aid.

Placement Procedures

☐ Placement of older blind clients is implemented through the same basic procedures as is the placement of younger blind persons. The difference lies in the kind of materials that are utilized in applying these principles and the emphasis that is given. Since most counselors are familiar with these basic procedures, I will merely indicate that they involve an application of the fundamental principles of professional selling to persuade the employer that an older blind person can be a profitable investment as an employee, and the use of basic job analysis procedures to identify jobs that can be performed safely and efficiently with little or no vision. Application of these principles will vary depending on the type of job being sought. With a typical service or factory job—where required job knowledge and duties are relatively simple, where social and communications skills are relatively unimportant, and when the client's verbal skills are limited—client performance in an employment interview will not be determining. In this situation, the counselor will have primary responsibility for selling the employer on hiring the individual and for selecting the job in which he is to perform. In the case of a professional, technical, or managerial type of job where acquired job knowledge is complex and unknown to the counselor, where social, interpersonal, and communications skills are extremely important, the client must sell himself in the employment interview since it is a crucial factor in determining the employer's decision. In this situation the counselor's primary responsibilities are: 1) to assist the client in the preparation of a resumé, 2) to contact the employer in an effort to persuade him to grant the

Preparing for interviews

client an interview, and 3) to help the client prepare himself for effective participation in the employment interview.

General Principles

☐ In successfully applying these principles to the placement of a younger blind client, the counselor must: 1) accurately anticipate employer objections to hiring based on the assumption that blindness would necessarily prevent the client from doing a satisfactory job; 2) develop effectve answers to these objections utilizing as much factual material as possible; and 3) develop a presentation describing ways in which blindness may exert a positive influence on job performance, for instance, greater concentration because of less visual distraction and less incentive for quitting because of relative difficulty in obtaining employment. In placing an older blind person the counselor must develop, in addition to the foregoing, a repertoire of answers to objections and positive points with respect to the disability of age.

Objections of employers

An invaluable source for such material is the publication *The Older American Worker: Age Discrimination in Employment,* by Willard Wirtz (1965). In it, one table, for example, lists the reasons given by employers for not hiring older workers; these include physical requirements, job requirements, company standards, promotion from within, earnings, cost of pension plan, lack of skills and experience, limited work-life expectancy, few applicants apply, educational requirements, adaptability, training too long and costly, inferior quantity of work, slowness in attaining proficiency, need for balance of ages, undesirable personal characteristics, cost of health insurance, and cost of life insurance.

Answering Objections

☐ The top three objections, physical requirements (34.2 percent), job requirements (25.1 percent), and company standards (9.1 percent), would appear to arise from the employer's tendency to stereotype older persons as physically feeble, mentally vague occupants of rocking chairs. It is similar to the stereotyping of all blind persons as helpless, dependent objects of charity, an attitude responsible for such statements as "How would he ever get to work?" or "There just isn't anything a blind person could do in my plant." An effective answer to these three objections would seem to lie in the area of providing statistical information on the number of older persons holding prominent and important jobs (such as national and state officials, heads of companies, etc.). If, of course, the chairman of the board or president of the company with which you happen to be dealing was older than your client, this would be a rather useful piece of information. Other objections are somewhat more difficult to answer. 1) Promotion from within: This could mean either adherence to a seniority system or the statement "We save our lighter jobs for our older workers." If they are talking about seniority, the answer has to be either that the client is interested in openings that are available after promotion by seniority has taken place or a request to discuss possible alternatives with management or union. If the objection is "We have no jobs for older persons because we save all of our lighter jobs for our older employees," the answer might be, "The individual I am talking about has been carefully screened by our agency. He is in good health, and has a work record that has demonstrated his dependability, competence, and motivation. He could live on his retirement pay, but he feels dissatisfied being inactive; he wants to work and to produce as much or more than your aver-

Promotion from within

age employee regardless of age. He would therefore not necessarily be limited to the kinds of jobs you are saving for your older employees."

Pension problems

2) Pensions: "Employing a person as old as your client would have a serious negative effect on our pension program." This is a valid objection. The answer to it seems to be: a) find a company which does not have a pension program, and many smaller companies do not, or b) arrange for an exclusion from the pension program for your client which, since it is a fringe benefit not required by law, can often be accomplished.

Short work-life expectancy

3) Work-life expectancy of your client is too limited: "When my client accepts a job he is psychologically and physically prepared to stick with it for the rest of his work life, which may be from five to ten years. So you would have a dependable, motivated employee for that length of time; when you hire younger employees, say between 20-25, they feel much freer to change and do change jobs more frequently than older workers as indicated by statistics compiled by the Department of Labor."

Positive Data

☐ An example of positive information on the performance of older workers, also found in Wirtz (1965), is that the output of office workers (based on 100 percent output for the age group 35-44), is 92.5 for those under 25, 99.4 for 25-34, 100.1 for 45-54, 98.6 for 55-64, and 101.2 for those 65 and older. There are additional examples of positive data on older employees. In a study by Bancroft and Garfinkle (1963), it was found that job changing for men is highest in the 20-24 age group and lowest in the 65 and over age group, going from almost 25 percent to three percent. A study of occupational mobility among employed male workers from January 1965 to January 1966 by Samuel Saben (1967) shows that only 38.2 percent of workers aged 20-24 remained on the same job during this period, whereas 92 percent of workers aged 65 years and over continued on the same job. Finally, Wirtz (1965) writes, "Reasons for hiring older workers stressed stability, dependability, and knowledge and experience." These are certainly characteristics which should be stressed in the employment interview, with particular emphasis also being placed on the importance of previous work experience as verified by the recommendations of prior employers.

Low rate of job changing

Selecting Occupational Areas

☐ Although first consideration would normally be given to placing an older blind person on a job similar to the one in which he had been working, it is obvious that there are many related areas in which work experience would be relevant as a positive factor in placement. In the case of service jobs, for instance, it is not the actual job performed so much as the fact of previous work experience that is important.

Vending stand program

A prime area for the placement of older blind persons with related job skills would be the vending stand program. It is my impression, based on conversations with a number of counselors, that in many states there are more stand opportunities than there are competent operators. It would seem that an older person in good health and with managerial, administrative, or sales experience, who had proven in his previous work to be reliable, dependable, and motivated, would make an excellent vending stand operator. If such a client preferred part-time work because of earnings limitations or for other reasons, it would seem

SBA consultantships

entirely possible to have the stand run by a team of two or four such older persons working half-days or perhaps a week at a time. As a final example of a client working in a related field, the Small Business Administration relies on people who have retired as entrepreneurs, administrators, or managers to act as its consultants; this would certainly be a feasible job for a qualified older blind person. The placement of individuals in the fourth group poses special problems requiring somewhat different approaches for solutions. The problems arise from the fact that employers tend to avoid hiring part-time or temporary workers because of their special status with respect to fringe benefits and the complications involved in making payroll deductions for Social Security, taxes, etc. One solution which seems to avoid this problem is employment in a sheltered workshop. In the case of the older non-blind person, this dilemma has been resolved by the creation of agencies which specialize in providing temporary and part-time employment for older persons.

Mature Temps

☐ The largest and perhaps most effective of these is Mature Temps, a for-profit organization sponsored by the American Association of Retired Persons and the National Association of Retired Teachers; it has offices in 13 cities throughout the country, including New York, Philadelphia, Chicago, Dallas, San Francisco, Los Angeles, Pittsburgh, Baltimore, Boston, and Atlanta. Mature Temps, by hiring the older person as *its* employee, paying him a salary and contracting his services to another employer for a fee, eliminates the objections raised by employers concerning pensions, life insurance, and other fringe benefits, plus the problems of payroll deductions. Mature Temps likes to start an office with no less than a thousand registered applicants. They require that persons have definite work experience and skills and emphasize a "mature attitude" throughout. Their first offices opened in New York and Philadelphia in 1969 and within six months they were placing a total of 500 people a week. For information, write to Mature Temps, Inc., Executive Offices, 1251 Avenue of the Americas, New York, New York 10020.

Experience Unlimited

A similar organization is Experience Unlimited, Inc. (EUI) which has offices in St. Petersburg, Clearwater, and Tampa, Florida. It began in 1969 as a non-profit organization with a grant from a private foundation and is now self-supporting. It hires older persons and then provides their services for a fee to employers. Like Mature Temps, it provides temporary and part-time jobs, but it is also interested in gradually moving older workers into regular full-time jobs and onto the employer's payroll. Fifty-six such placements were made in 1970, the first year of its operation. EUI charges the employer the regular rate of the job plus 22 percent to cover the cost to EUI of Social Security and other taxes, health insurance, and the paperwork involved in maintaining a payroll deduction system. In 1970, it paid $1.95 for the jobs of custodian, food handler, and basic clerk; $2.00 for receptionist or switchboard operator, and up to $2.50 for a secretary. During 1970 it reached an average weekly employment of 4,000 hours. It has nine full-time and four part-time staff who are all 55 or over. It provides training which is carried out by older volunteers. It also provides counseling; counselors will accompany a client to his first job to make sure instructions are clear and to give him support. For information write to Gerald S. Rehm, President, Experience Unlimited, Inc., Box 4689, Clearwater, Florida 33518.

Love to Share

Another type of program which provides part-time employment for older persons is Love To Share which operates out of three centers in Ft. Smith, Arkansas. These centers, which are open each afternoon from 2:30 to 5:30, are manned by 35 persons over the age of 55. They receive the federal minimum wage for providing snacks and recreation to school children who would otherwise be at home alone because their parents are working. For information write to Mrs. June B. Ellis, Family Service-Travelers Aid Agency, 22 North Greenwood, Fort Smith, Arkansas 72901.

"Rent-a-Granny or Grandpa"

"Rent-A-Granny or Grandpa," a non-profit program in Albuquerque, New Mexico, is basically a referral and placement service for persons 55 and over who are seeking full-time, part-time, and temporary employment. Within the first-year of its operation, June 1973 to June 1974, it had rendered service to 2,500 older persons. For information, write to Mrs. Anne Beckman, Director, "Rent-A-Granny or Grandpa," Albuquerque-Duke City AARP Chapter 1364, Albuquerque, New Mexico.

Working with agencies

It seems to me that agencies such as these, particularly Mature Temps, could be a valuable resource in helping a counselor to develop part-time or even full-time employment for his older blind clients. The counselor would first have to develop a good personal relationship with agency personnel and then discuss with them specific ways in which they could work with each other to facilitate the placement of an older blind person. In this process I would suggest that the counselor assume major responsibility for selling the employer, but the agency could give him support and could arrange interviews for him with employers who look favorably upon the employment of older persons because of their experience with the agency.

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Perceptual Organization in Blind Children

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ABSTRACT: The blind child builds his perceptions from tactual (haptic) and auditory information. Assumptions on the part of professionals that tactual and visual data are identical can result in misconceptions that may lead to delayed development and distortions of cognitive process in blind children. A review of research on the perception of form and spatial relationships suggests that differences between tactual and visual information result in differences in perceptual organization. However, studies indicate that blind children reach developmental milestones (e.g., conservation) at approximately the same ages as sighted children.

The perceptual organization of blind children has never been fully explored. Research data is comparatively sparse and usually produced by limited samples, not always carefully matched with the sighted control group or screened for such factors as multiple handicaps, experience deprivation, and emotional disturbance. Teachers and practitioners are seldom consulted by authors of research reports, who frequently interpret the data according to their own best guesses as to the effects of blindness upon cognitive functioning. Assumed inferiority of blind subjects in the performance of various perceptual tasks on the part of the researcher has too often determined the outcome of research studies. Vision, as the dominant sense of the sighted, has received far more research attention than all other sense modalities. The research data on blindness that does exist suggests that visual impairment does not prevent or even delay the development of efficient information processing. However, the information is primarily tactual and auditory: the blind child builds his images and constructs from tactual (somasthetic) and auditory contact.

Perceptual Organization

☐ The nature of the perceptual organization of the blind child is best underwith the realization that visual and haptic data differ in important aspects and cannot be considered to yield identical information (Axelrod, 1951). Visual information is rich with a variety of detail; colour, shape, and size are perceived simultaneously to form the associations that underlie object recognition. The congenitally blind child is confronted with building concepts about the world around him without benefit of visual information. He must find his meaning from other sense data. Texture, weight, temperature, shape, and size merge into the formation of a tactual schema. Objects perceived as a sequence of touch sensations are recognized via discernible touch qualities (Scott, 1969).

Tactual perception

The efficiency of tactual schema in supporting realistic notions of the object world is demonstrated by the performance of blind children in tasks of object recognition. Gottesman (1971) found that the ability of blind children was comparable with the sighted on tasks of haptic perception. The response levels of the subjects in both blind and sighted groups matched the developmental stages outlined by Piaget and Inhelder (1956). Gottesman's subjects were three groups of children, two sighted and one totally blind, ranging in ages from two to four years, four to six years, and six to eight years. The objects for recognition through manual manipulation were categorized in three groups: a) familiar solids such as a pencil, a key, a comb, a ball, a pair of scissors, a spoon; b) flat geometrical shapes, e.g., a triangle, a cross, a six-pointed star, a four-pointed star, a semicricle, and a shield; and c) topological forms, including an irregularly shaped object with one hole, an irregularly shaped object with two holes, a closed ring, an open ring, two intertwining rings, and two superimposed rings. Gottesman's study revealed the similarity in performance of both blind and sighted children on Piaget and Inhelder's developmental scale. Worchel (1951) also found no difference between blind and sighted subjects in the ability to recognize haptically simple, solid geometric forms.

Object identification

As the child explores the environment around him, he learns to detect the invariant properties of objects as they undergo transformations in space (Gibson, 1967). Because the blind child forms his ideas about objects from their tactile, not their visual, properties, awareness is altered. Perceptions of distance, perspective, and angle and relationships between objects are not only different for the blind, but those features that are perceived first and seem most simple to the sighted may represent more complex relationships to the blind. On the other hand, the ability to identify objects by touch alone comes later for sighted children. Lobb (1965), using eighth grade children, compared vision and active touch in form learning and found that in sighted children vision is the vastly superior sense.

Concepts of Quantity

□ The discovery of conservation, that an object that changes in appearance can still be the same in quantity, earmarks the final stage in the development of concepts of quantity. A conserving child is able to compare objects in terms of more than one dimension (Elkind, 1961). According to Piaget, it is this equation of differences that underlies abstract quantity and number concept formation. In Piaget's theory, the discovery of conservation is limited by both the maturation of the child and the properties of objects. Piaget expected that blind children would be slower than their sighted counterparts in forming concepts of conservation, an expectation refuted by Cromer's experiments.

Conservation

Different perspective

Cromer (1973), testing concepts of conservation among blind children, found that the blind and sighted achieve conservation at about the same age. He also observed that blind children brought a different perspective to the task although their reasoning was similar to that of the sighted children. The non-conserving blind children believed that a short, wide cylinder was bigger than a tall, thin one of the same volume, a response not found in any non-conserving sighted child, whether blindfolded or not. "It could be inferred, then, that the blind children based their answers on a truly tactile representation of the contents of the cylinders, and that, by contrast, the non-conserving sighted children who undertook the experiment while blindfolded, based their answers on tactile correlates of vision since they, like the non-conserving seeing children, used the height of the balls as the criterion for greater amount" (p. 248).

Blind not deficient

Cromer was careful to match his subjects in terms of both cognitive functioning and age. The children, both blind and sighted, were from an urban background and all began their schooling at the same age. Cromer concluded that blind children are not deficient in thinking processes relevant to conservation and that it may be that too strong an emphasis has been placed on the importance of vision in developmental theories.

Tactual Perception Test

☐ Sato and Anayama (1973) report the standardization of a tactual perception test for the blind consisting of sub-tests that include form, length, size, roughness, and weight perception. When this test was given to 272 totally blind children in grades one to six and 60 sighted pupils in the same grades, the results showed that totally blind subjects had higher scores on the form, length, and size sub-tests. Sighted and blind subjects did equally well on roughness and weight sub-tests. It would seem that the totally blind, who are so dependent upon tactual exploration to learn about their world, become more efficient than the sighted in manual analytic manipulation of objects.

Spatial concepts

Positional relationships

Complex form relationships

Hartlage (1969), exploring the role of vision in the development of spatial concepts, asked a series of questions involving positional references, e.g., in front of, in back of, above and below, left and right. (One example of the type of space questions used by Hartlage is "John is in front of Mary. Mary is in front of Bill. Bill is in front of John ——, in back of John ——, can't say —— " (p. 180).) He concluded that relational judgements may be specific to experience and therefore that concepts of positional relationships may be more difficult for the blind. Worchel's (1951) investigations, which also required subjects to imagine positional relationships, again demonstrated the disadvantage of blind subjects. He presented a series of geometric forms to two groups of blind and sighted subjects and asked them to imagine the shape that would result if two identical forms were placed together. The congenitally blind were significantly poorer at this task than both the sighted and the adventitiously blind. Worchel interpreted his results to indicate that visual imagery was necessary for the mastery of complex form relationships. Revesz (1950) also found that notions of horizontality and verticality were less salient to the blind.

Spatial Coordination

☐ Studies presenting identical discrimination tasks to blind and sighted subjects find the blind inferior to the sighted in tasks which involve some kind of spatial coordination, that is, tasks that the subjects can perform only by understanding certain types of spatial relations such as distance, continuity of line and shape, and the integration of these. The poorer performance of the blind is attributed to inadequate development of spatial relations (Axelrod, 1959).

Line to curve transformation

Anne and Herbert Pick (1966) found that blind subjects were able to discriminate line to curve transformation more easily than sighted or partially sighted subjects. The Picks presented 12 standard forms, replicas of those constructed by Gibson (1962), consisting of line shapes embossed on square pieces of smooth metal. There were five types of transformations of each embossed line shape: line to curve changes, rotations and reversals, perspective transformations, size changes, and breaks and closes. The task was to feel a standard form and a comparison form simultaneously, one with each hand, and decide whether they were the same or different. Tactual perception of these forms was much more difficult than visual perception. The fact that the shapes were derived from visual studies raises a question as to whether shape dimen-

More difficult task

sions are meaningful to the senses of vision and touch in the same way. Huckabee, Fernell, and Jack's (1971) observation that blind children require a significantly longer mean time to discover embedded figures than sighted individuals, also suggests that what is perceived easily by vision may be a complex task for tactual perception.

Perceptual Differences

☐ The difficulties experienced by blind children in tasks involving more complex positional relationships may provide some clues to the differences between tactual and visual perception. Gibson (1967) suggests that space perception begins as "the perception of objects relative to surfaces and edges, relative to one another, and relative to the observer." Her famous cliff experiments demonstrate at how early an age a sighted child is able to discern depth relationships from visual clues alone. The view of objects as relative to the position of the observer, with distance and angle of perspective clues, is not part of tactual experience. Thus the blind child becomes dependent on sound for distance cues. It is in the latter half of the first year that the blind infant learns to use sound, independent of tactual perception, as an indicator of the existence of an object (Freedman, Fox-Kolenda, Margileth, & Miller, 1969).

Sound cues

Space Comprehension and Object Permanence

☐ Piaget postulates a series of developmental stages in which the child learns to comprehend a single, objective space. As the child searches for objects, he is able to perceive the spatial relationships between himself and the place of the object. This concept of space is highly related to the concept of object permanence because the child continues to differentiate not only space but the object in it. Although the blind child does not form visual notions of spatial relationships (e.g., how things appear when they are half hidden by other objects, reduction of size [as in photographs], mirror image of objects), he does, however, differentiate between how something sounds when it is close by and when it is distant, or between sounds coming from different directions. It may be that the blind child is able to substitute auditory for visual space only after he has achieved object permanence (Fraiberg et al., 1966). Witkin et al. (1968) hypothesized that 1) perception in both the blind and sighted proceeds from the global to the articulated and that 2) blind children will be less articulated in their cognitive functioning than sighted children. They noted that the difference between the blind and the sighted was not as great as they had expected. Several of their blind subjects showed highly developed articulation, and, in general, the blind subjects had scored much higher than sighted subjects in both the auditory embedded figures test and digit span sub-test of the Wechsler. Both of these tests required sustained auditory attention, which was well developed in the blind. Witkin and his co-workers also observed marked unevenness in levels of cognitive functioning of the blind as compared to the sighted, but their study reflects differences that are likely to occur in any small sample of blind children.

Articulation

Cross-modal transfer

Axelrod also noted unevenness in performance of blind subjects and concluded that it was not lack of spatial concepts that hindered the blind but a greater difficulty in the formation of learning sets (Axelrod, 1959). He presented his subjects with a series of tasks involving the transfer of a principle of problem solution from one sensory mode to another, e.g., matching prob-

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lems presented haptically to analogous ones presented aurally, and vice versa. There seemed to be less flexibility and cross-modal transfer demonstrated by blind subjects although another possible interpretation is that cross-modal transfer cannot be tested by the simple substitution of one sense for another. However, it is evident that the seeing person learns to perceive tactual information visually. Vision becomes dominant as other sensory data become attached to visual clues.

Conclusions

☐ Certain tentative conclusions may be formulated on the basis of existing research data on the perceptual organization of blind children.

Adaptive hand behavior

1. In the absence of vision adaptive hand behavior is impeded. Yet the hand substitutes for the eye in exploration of the environment. The backwardness of blind children is related more to a failure to develop adaptive hand behavior than to the absence of vision itself. Blind children must develop systematic hand exploration in order to attain realistic notions of the world of objects from tactile data (Fraiberg et al., 1966).

Spatial orientation

2. The spatial orientation of blind subjects must be understood in terms of the tactile and auditory properties of space, not its visual representation. Notions of continuity of line, angle of perspective, and spatial order (including figures, directions, positional relationships, size, and shape variations) are formulated on the basis of different data. These conceptions are not identical in the blind and the sighted. The blind child learns to guage distance and direction by variations in sound: perception of direction is derived from sound localization, not visual angle of perspective. Spatial relationships are not perceived simultaneously by the blind and are probably more analogous to sequential relationships than to positional references.

Nature of tasks

3. Blind subjects do poorly on perceptual tasks that are simply tactual presentations of visual material, e.g., embedded figures, raised line representations. Much of the poor performance noted by researchers may be traced to the nature of the tasks presented.

Dominance of vision

4. The blind child requires more experience than his sighted counterpart to develop accurate notions of objects and their relationships to one another. No sensory modality is as complete as vision for richness of detail. Neither the tactile (haptic) nor the auditory sense becomes dominant for the blind person in the same way that vision becomes dominant for the sighted. Blindness also imposes a severe limitation on receiving immediate feedback; for example, the sighted child rolls a ball and at the same time sees where it goes. It is too easy for blind children to develop distorted notions of the physical world.

Feedback

Boring toys

The withdrawal of many young blind children from age-adequate play into simpler, primitive activities may suggest not a deficiency in the blind child but rather that many toys designed for sighted children are of little interest to the blind.

Need for research

There is still great need for a body of data on perceptual organization to which teachers, rehabilitation counselors, psychologists, and social workers may turn for guidance and direction in implementing sound educational and rehabilitative programs for blind children and adults. Research into blindness promises answers that will provide enriched understanding of cognitive development in both the blind and the sighted.

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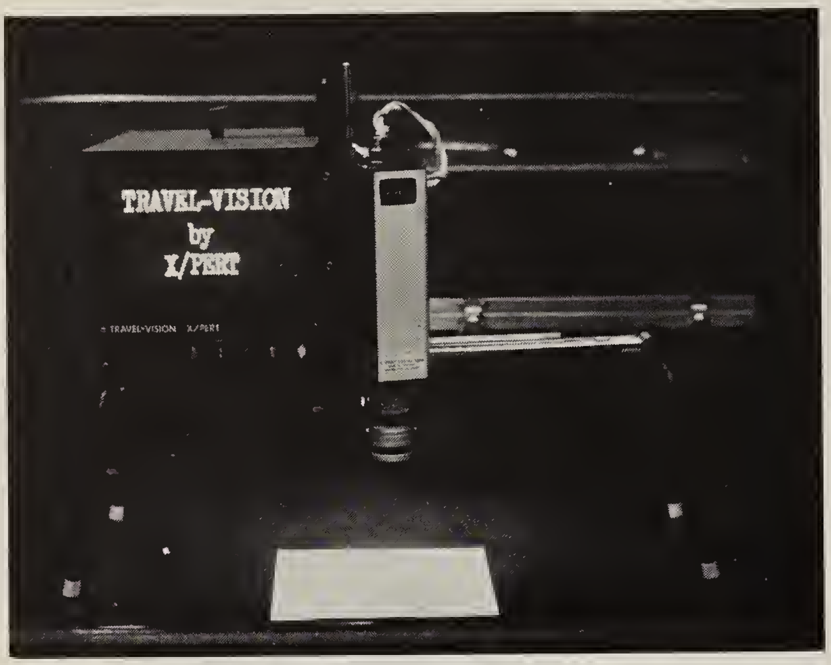

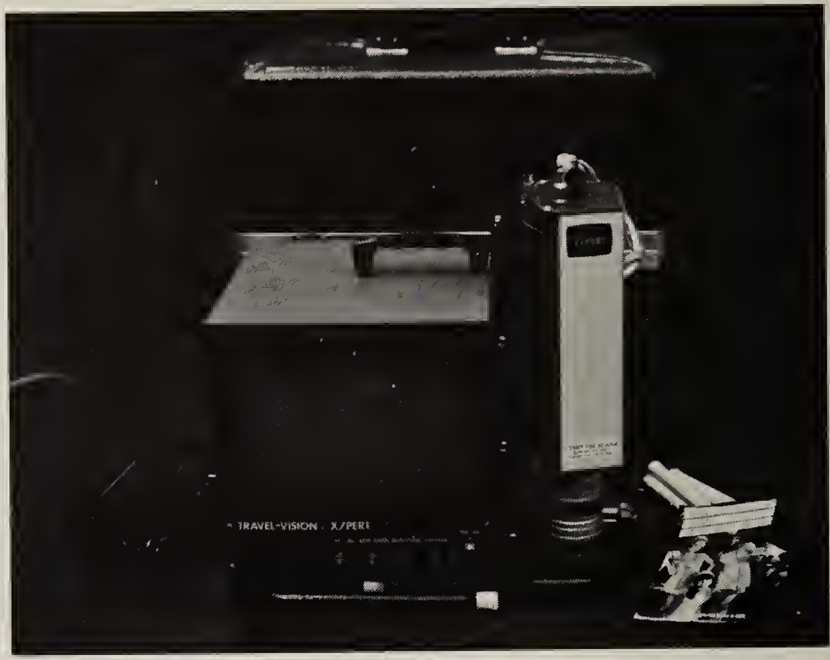

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Comment

A special forum for individuals to respond in detail to material published in the New Outlook for the Blind *or elsewhere, to present new ideas, or to raise issues which relate to the specialized field of work with blind and visually handicapped persons. Contributions should be 350-1000 words in length.*

A Drama Summer School

David O. Mumford, A.L.A.M.

The Social Service Department in Wolverhampton, England, and a local institute for the blind conducted a summer drama workshop, aimed at integrating blind and sighted adolescents. Twenty local blind and sighted students, whose ages ranged from 11 to 16 years, were chosen for the project, which was held one full day each week for a month. The techniques of drama and dance improvisation were used in the sessions because they provided a high level of group sensivity and individual creativity, reduced inhibitions, and dispelled any fears of "correct" or "incorrect" ways of performing.

A travelogue was chosen as a continuous theme for the sessions. This gave the students the opportunity to explore and reenact the historical and cultural events of a wide variety of countries. To increase awareness of each country or character, and to enhance the atmosphere of the performance, a large selection of costumes were provided. In addition, the students learned the rudiments of such stage crafts as stage make-up, props, sound effects, and atmospheric lighting.

During the first few sessions the performances were stilted and inhibitions ran high. To alleviate this problem special sensitivity games were devised. These proved so successful that they were used as a warm-up before each session. By the third week their improvisations had become more spontaneous, the group interaction had improved, and each individual was more confident in expressing his ideas.

At the suggestion of a student an on-going dance drama was developed. This involved individual interpretation, through movement, of three distinctively different moods of music. The only problem that arose was that the totally blind students had no concept of how modern dance looks when it is performed. Even so, all group members participated enthusiastically and produced a wide variety of interpretations.

The program was successful in achieving its primary goal—integration of sighted and blind adolescents. Because of the methods employed, it was also successful in reducing individual inhibitions, teaching the fundamentals of drama and speech, and sharpening the creative talents of all of the students involved. This experimental project also revealed problems and needed improvements that could be considered for future programs of this nature.

A major obstacle to the integration of the students was their wide age range; had this been narrowed the task would have been much more easily accomplished. It also became evident, after getting to know the students, that due to a lack of life experiences the blind participants tended to be less mature than their sighted peers. As far as the actual working conditions, a small group working in a confined area appears to have greater spontaneous interaction than a large group or an open workspace. The sessions should be scheduled at much closer intervals to prevent the waning of group interplay.

Most importantly, this project illustrated the need for developing an informal interaction between blind and sighted adolescents, not only as a summer workshop, but as a recognized part of the school curriculum.

Mr. Mumford is professionally connected with mobility for blind persons and is a student at the Birmingham School of Speech and Dramatic Art, England.

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Mary Maie Richardson, head librarian.

The Story of Leonard Dowdy: Deaf-Blindness Acquired in Infancy, by Gertrude Stenquist. Perkins School for the Blind (Watertown, Massachusetts 02172), 1974, viii + 64p., illus. $3.00. This study of Mr. Dowdy, who has been deaf-blind since the age of 19 months, is divided into two parts. The first section is a personal commentary by the author who first taught Leonard in 1934 when he was 7½ and in his third year at Perkins School for the Blind. The second section contains information concerning norms of development, language learning, educational methods, etc. for those profoundly deaf-blind in early childhood.

Experience With Closed-Circuit Television in the Blind Rehabilitation Program of the Veterans Administration, by Edwin B. Mehr, Alan B. Frost, and Loyal E. Apple. *Bulletin of Prosthetics Research* (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402), BPR 10-21, Spring 1974, pp. 54-68. Report on a Veterans Administration program including screening, examination, evaluation, comparison with optical aids, training and subsequent followup of a group of 40 veterans. Test data includes reading speeds, duration time, minimum print size, magnification, working distances and

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legibility of handwriting. The article originally appeared in the *American Journal of Optometry and Archives of American Academy of Optometry*, Vol. 50, No. 6, June 1973.

Reading Aids for the Blind: Information for Consumers and Teachers, by Harvey Lauer. *The Braille Monitor* (National Federation of the Blind, 2652 Shasta Road, Berkeley, California 94708), January 1975, pp. 1-8. The author is electronic reading specialist, Central Section for Visually Impaired and Blinded Veterans, at the Veterans Hospital in Hines, Illinois. His paper discusses reading aids to be used with print by persons unable to use optical aids or closed-circuit TV systems.

The Argonne Braille Machine. *The Seer* (Pennsylvania Association for the Blind, 2843 N. Front Street, Harrisburg, Pennsylvania 17110), Vol. 45, No. 3, Fall 1974, pp. 4-7. Report based on data supplied by Arnold P. Grunwald, the inventor of the device now under development at the Argonne National Laboratory, Argonne, Illinois. The reading machine utilizes magnetic tape and Mr. Grunwald hopes that eventually bulky and costly braille books can be reduced to small reels of tape.

A Farsighted School and a Sightless Student Are Making History, by Bernard Asbell. *The Seer* (see address above), Vol. 45, No. 3, Fall 1974, pp. 10-15. Article reprinted from *Today's Health*, October 1974, about David Hartman, the first sightless applicant to be admitted to a medical school. Now a third-year student at Temple University School of Medicine in Philadelphia, Mr. Hartman's story was dramatized in a television movie, "Journey From Darkness," shown in February 1975.

Successful Integration of Joy Marmon, by Warren Leigh. *The Optimist* (Idaho State School for the Deaf and the Blind, Gooding, Idaho 83330), Vol. 55, Nos. 3 & 4, November-December 1974, pp. 1-2. Interviews with public school teachers and with Joy Marmon, a blind student who transferred last year from the Idaho State School for the Deaf and the Blind to the public high school in her home town.

Hear Ye, Hear Ye. *Performance* (The President's Committee on Employment of the

Handicapped, Washington, D.C.20210), Vol. 25, No. 6, December 1974, pp. 10-11. Brief story of "The Washington Ear," an information program on a closed-circuit radio broadcasting channel for the blind and severely disabled in the Washington, D.C. area.

Industrial Education for the Visually Handicapped, by Robert W. Bischoff. *The Utah Eagle* (846 20th Street, Ogden, Utah 84401), Vol. 86, No. 4, January 1975, pp. 1-3. Discussion of the practical aspects of industrial education as well as its role in helping the visually handicapped student to a better understanding of our highly technical society.

Blind Employees Succeeding as Job Information Specialists, by Hedwig Oswald. *The Blind Californian* (The National Federation of the Blind of California, 3315 Cabrillo Street, San Francisco, California 94121), Vol. 15, No. 2, Fall 1974, pp. 29-33. Article reprinted from the *Civil Service Journal,* published by the Bureau of Recruiting and Examining, U.S. Civil Service Commission, concerning the training and placement of blind persons in Federal Job Information Centers, where they handle questions concerning all facets of federal employment.

Basic Test Kit for Selection of Reading Aids for the Partially Sighted, by Louise L. Sloan, Adelaide Habel, and Frederick Ravadge. *American Journal of Ophthalmology* (Ophthalmic Publishing Company, 160 East Grand Avenue, Chicago, Illinois 60611), Vol. 78, No. 6, December 1974, pp. 1014-1021. Description of the contents of a basic test kit of nonspectacle reading aids with information as to use, manufacturers, and suppliers. Reprints may be requested of the first author at Wilmer Institute, Johns Hopkins Hospital, 601 N. Broadway, Room 15a, Baltimore, Maryland 21205.

Spokane Expo '74 Has Delta Gamma Guides. *The Anchora of Delta Gamma* (Delta Gamma Fraternity, 3250 Riverside Drive, Columbus, Ohio 43221), Vol. 90, No. 4, Winter 1974, pp. 37-38. Blind and partially sighted visitors to Expo '74 World's Fair in Spokane, Washington, were provided with special guide services by volunteers of the Delta Gamma alumnae.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the* American Foundation for the Blind.

Agency Administration

An Evaluation of Management by Objectives, by Melvyn C. Raider. *Social Casework* (44 East 23rd Street, New York, New York 10010), Vol. 56, No. 2, February 1975, pp. 79-83. Many agencies are being pressured to demonstrate program effectiveness and to increase efficiency. In response, many administrators are turning to a Management by Objectives (MBO) approach to improve agency management. This author advices that several key questions should be considered before acting on MBO. These questions are: How much of a commitment is required? How much time and effort will it take? How much will it cost? What is the probability of success? How will it affect the agency?

Aging

What's Inside You It Shines Out of You, by Marc Kaminsky. Horizon Press (156 Fifth Avenue, New York, New York 10010), 1974, 236p. $7.95. In 1972 the author started poetry therapy sessions in the Jewish Association for Services for the Aged clubrooms in New York City. These sessions—part way between poetry workshops and group therapy—helped the aging participants to release emotions they had never before expressed and to cope with a world that was rejecting them. In this book the author has recorded the poignant moments and poetry that came out of these sessions.

The Emerging Political Consciousness of the Aged: A Generational Interpretation, by Pauline K. Ragan and James J. Dowd. *Journal of Social Issues* (Society for the Psychological Study of Social Issues, P.O. Box 1248, Ann Arbor, Michigan 48106), Vol. 30, No. 3, 1974, pp. 137-158. This article presents a model of the factors contributing to the development of sociopolitical movements. The prospects of the emergence of a political consciousness and a social movement of the aged are discussed, with attention to precursors of these political expressions in the current generation of older people.

Architecture

Barrier Free Design, Accessibility for the Handicapped, by Phyllis L. Tica and Julius A. Shaw. Institute for Research and Development in Occupational Education (Center for Advanced Studies in Education, Graduate School, University of New York, 33 West 42nd Street, New York, New York 10036), No. 74-3, 31p. Free. This booklet was written to help policy makers, architects, engineers, and contractors design buildings with the needs of handicapped people in mind. It covers such areas as the width of doors, the height of water fountains and telephones, the shape of handrails, and the layout of parking lots.

Career Education

Straight Answers on Career Education, by Kenneth B. Hoyt. *Today's Education* (National Education Association of the United States, 1201 16th Street, N.W., Washington, D.C. 20036), Vol. 64, No. 1, January 1975, pp. 60-62. Using a question and answer format, the author discusses what career education is, what role it can play in education and in people's lives, why it is necessary, and how a program can be started.

Early Childhood

Integrating Children with Handicaps into Early Childhood Education Programs, by Shirley Cohen. *Children Today* (Superintendent of Documents, Government Printing Office, Washington, D.C. 20402), Vol. 4, No. 1, January 1975, pp. 15-17. The author stresses the importance of integrating handicapped children into the regular network of day care centers and nursery schools. Recognizing the problems that would be involved for teachers, parents, handicapped and non-handicapped children in an integrated program, she recommends that the special education community share its experience and ideas about bringing the handicapped into the mainstream of education and society.

In Brief

■ A new stained glass window, designed with a portrait of Helen Keller, was unveiled January 26 at Trinity United Methodist Church, Albany, New York. Since Helen Keller is the first woman to be honored in a series of window dedications at Trinity, the entire service was written and conducted by women. The window, which was designed by Mr. and Mrs. Paul Twichell, was dedicated in memory of Nora Leach Sproule, a former leader of Trinity women's groups. The ceremony included statements about Helen Keller's life and work with the handicapped, quotes from her book, *Midstream: My Later Life*, a special display of photographs, and a showing of the film *The Miracle Worker*. Representatives from the New York State Commission for the Visually Handicapped and the Albany Association for the Blind explained how Miss Keller's work is being carried on in their community.

■ The National Institute for Rehabilitation Engineering of Pompton Lakes, New Jersey, has developed an inexpensive means of providing "synthesized" peripheral vision. The Synthetic Peripheral Vision Aid is an optical device which can be made a part of conventional eyeglasses. One devise can be used to provide a 160 degree field for a person having vision in one eye. Two devises can be attached to the outside of the lens to provide a peripheral vision field of 220 degrees or more.

■ Western Electric's Medical Engineering Club (MED), in Chicago, has developed a device that allows blind people to enjoy safe bicyling with a companion. The instrument, named Cricket by one of its users, is attached under the seat of the lead bicycle. It emits a high-pitched beep, which can be raised or lowered, so the blind person can follow its sound from as far as 200 feet. The Cricket weighs less than a pound, runs on a nine volt battery, and costs less than $10.00 to make.

■ *A Consumer Guide to Organizing the Handicapped*, is now in its second printing and available from the Massachusetts Council of Organizations of the Handicapped (Eileen Hepp, 67 Jay Street, Cambridge, Mass. 02139) for $2.00. The book contains information on how to recruit members, develop communications, organize meetings, and promote the development of a strong organization.

■ The National Braille Association (NBA) has expanded its Braille Book Bank to include a braille music section. The collection, which presently contains 250 items comprised of scores, theory, and harmony studies, is expected to increase steadily. Copies are priced at 6¢ per page for individual orders, and 9¢

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NBA is asking that anyone who owns or transcribes master copies of braille music consider adding them to the Braille Book Bank Music Unit, 85 Godwin Avenue, Midland Park, New Jersey 07432, listing the title, composer or author, and any other pertinent information.

- On Election Day 1974 blind residents of Talladega, Alabama were able to vote for the first time without assistance. The Talladega Chapter of the Alabama Federation of the Blind, which is affiliated with the American Council of the Blind, conceived the idea of placing clear braille strips over the name of each candidate and office, each amendment, and each lever in the voting booth. As a result, blind voters who knew braille were able to vote without the assistance of poll officials. Sighted voters could see through the transparent strips to the printed names below. To avoid confusion, special classes in voting procedure were held to demonstrate the way the voting booths should be operated.

- The Job Placement Project of the University of Georgia publishes a monthly newsletter giving placement information on projects throughout the country. It also includes information on publications about placement, research reports, and placement tips. To share information or to receive the newsletter, write, Roger Decker, 413 Aderhold Hall, University of Georgia, Athens, Ga. 30602.

Correction

In the January 1975 issue of the *New Outlook* the following was inadvertently omitted from the article, "The Braille Computer Terminal: Its Application in Employment," by George Dalrymple:

This work was performed at the Sensory Aids Evaluation and Development Center of the Massachusetts Institute of Technology and was partially supported by the Social Rehabilitation Service under grants 14P-55016/1-03 and 23P 55854/1-01 and by the John A. Hartford Foundation.

Appointments

- The Seeing Eye Inc.: **Stuart Grout,** executive vice president.

- Blinded Veterans Association: **Don E. Garner,** national field service director.

- Industrial Home for the Blind, Brooklyn: **Anne Rose,** supervisor of information services.

- The Lighthouse, New York Association for the Blind: **Kenneth E. Phillips,** director of recreation and cultural services.

Awards

- Beverly Myers Nelson Achievement Award of the American Board of Opticianry: **Dr. Arthur H. Keeney,** dean, University of Louisville, School of Medicine.

- California Rehabilitant of the Year 1974: **Richard D. Joy, Jr.,** deaf-blind electronics assembler, Santa Rosa.

- Colorado Blind Worker of the Year: **Warren Wilson,** power sewing machine operator, Denver.

Retirements

- Industrial Home for the Blind, Brooklyn: **David Hamilton-Jones,** supervisor of information services.

- The Seeing Eye Inc.: **George Werntz, Jr.,** executive vice president.

Coming Events

May 21-24 International Association of Rehabilitation Facilities, Annual Conference, Toronto.

May 22-24 International Celebration of 150th Anniversary of the Invention of Braille, French National Committee, World Council for Welfare of the Blind, Paris.

June 8-12 Special Libraries Association, Chicago.

June 15-19 American Medical Association, 124th Annual Meeting, Atlantic City, N.J.

June 15-21 American Physical Therapy Association, Anaheim, CA.

June 18-20 Association for Education of the Visually Handicapped, North Central Region, Madison, WI.

June 21-22 International Federation on Aging, Third Conference, Jerusalem.

June 22-27 Tenth International Congress of Gerontology, Jerusalem.

June 25-28 Lions International Convention, Dallas.

June 29-July 3 International Congress of Biomechanics, Jyvaskyla, Finland.

July 20-23 American Association of Workers for the Blind, Biennial Meeting, Atlanta.

July 28-August 1 International Conference of the Joint Council for the Education of Handicapped Children, Canterbury, England.

July 31-August 8 World Federation of the Deaf, 7th World Congress, Washington, D.C.

August 7-9 Association for Education of the Visually Handicapped, South Central Region, Little Rock.

September 21-25 American Academy of Ophthalmology and Otolaryngology, Dallas.

September 24-28 American Academy for Cerebral Palsy, New Orleans.

September 26-27 Association for Education of the Visually Handicapped, Middle Atlantic Region, Wilmington, DE.

October 15 White Cane Safety Day.

Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display—$13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, 15 West 16th Street, New York, N.Y. 10011.

AIDS AND APPLIANCES

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Instruments, Recreation Equip. Sound or print catalog. Science for the Blind Products, Bala-Cynwyd, Pa. 19004.

CATALOGS

Optacon Catalog—products and services—a complete listing of Optacon Systems, Accessories, Training Course, and Training Material prices. Products are also pictured and described in detail. Write Telesensory Systems, Inc., 1889 Page Mill Road, Palo Alto, California 94304.

Aud-a-log, new 90-min. soundsheet catalog (8-1/3 rpm) of instruments for blind and visually limited. Free. SFB Products, 221 Rock Hill Rd., Bala-Cynwyd, Pa. 19004.

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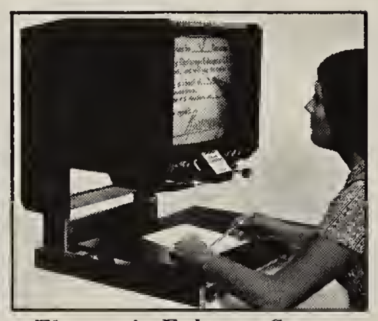

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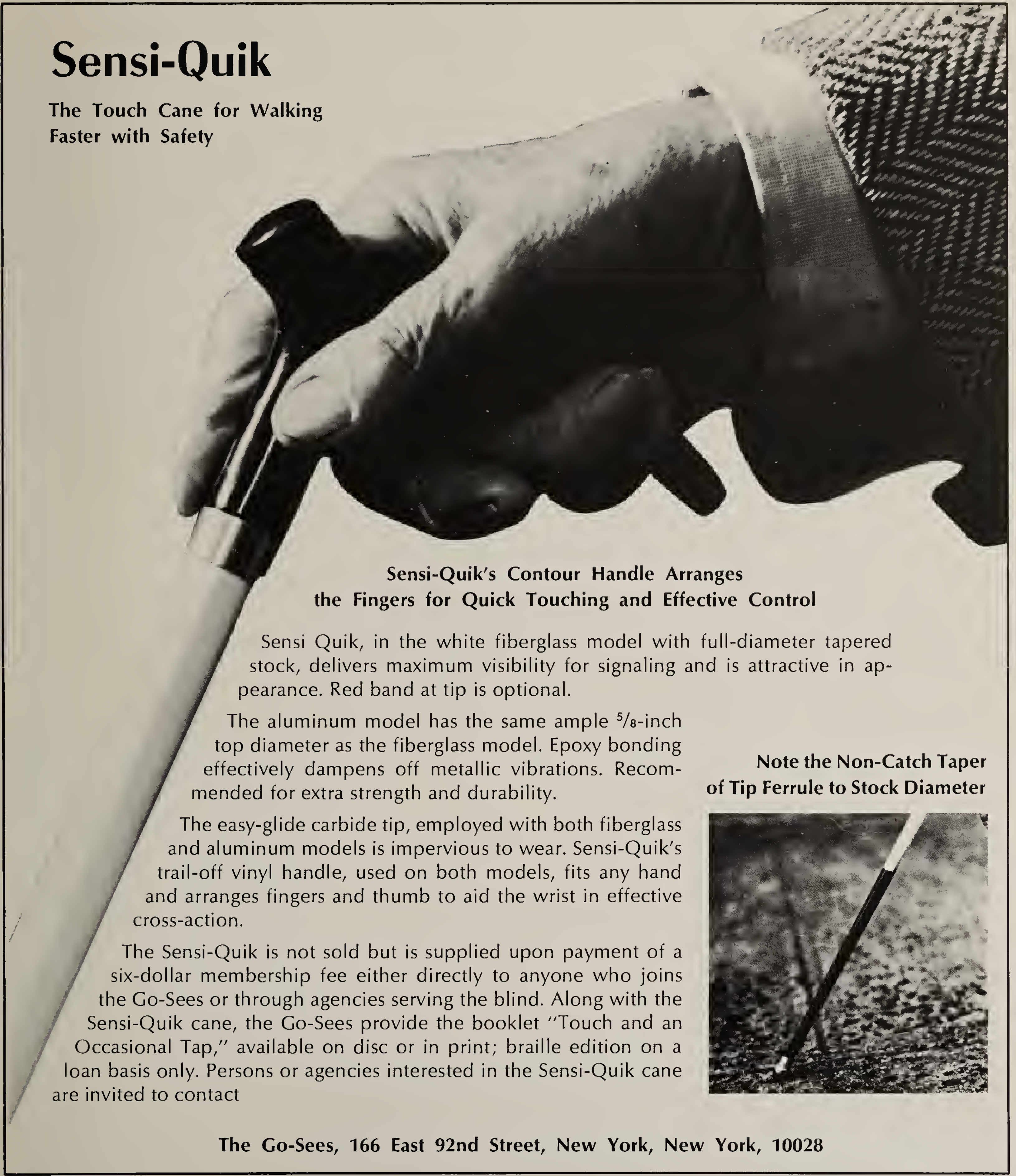

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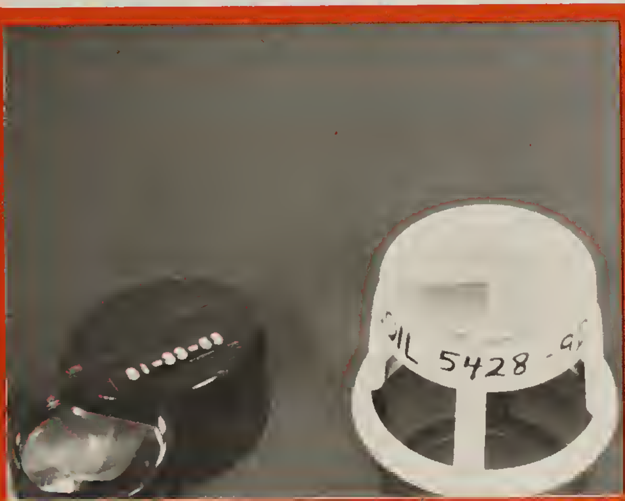

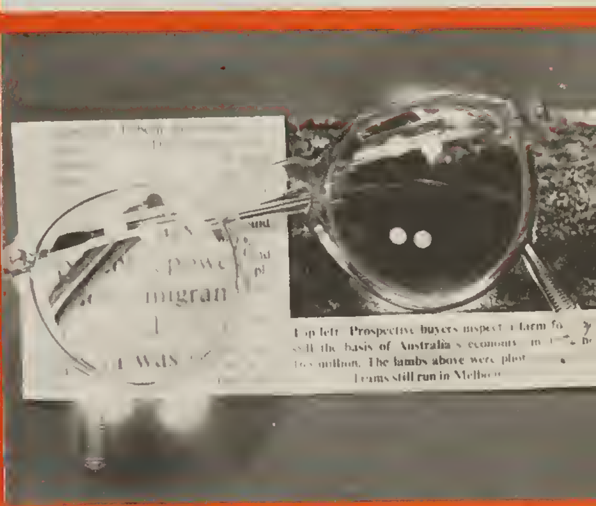

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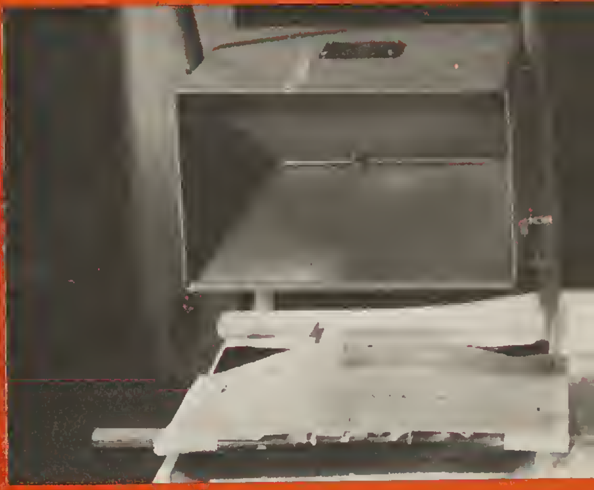

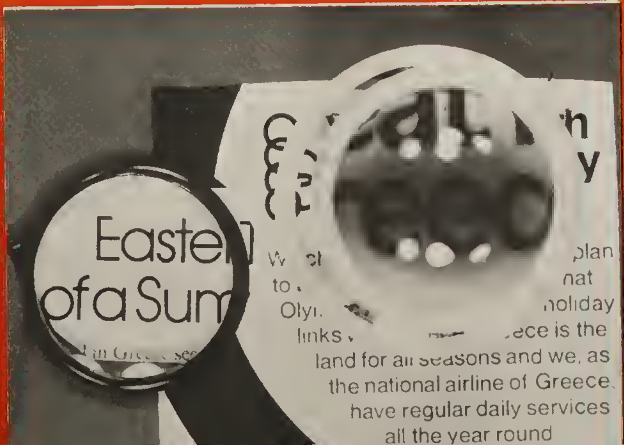
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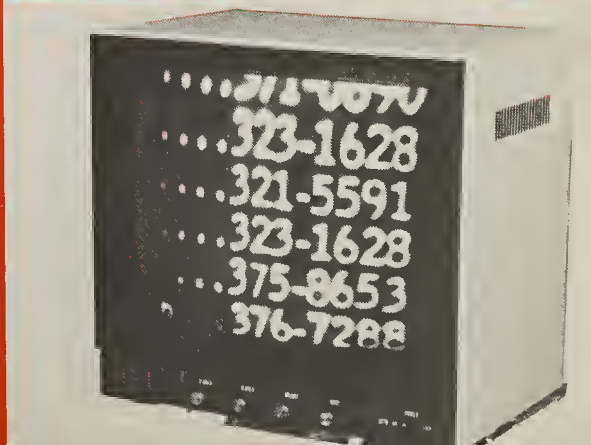

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Low Vision Services in an Agency: Structure and Philosophy

ELEANOR E. FAYE, M.D., F.A.C.S.
CLARE M. HOOD, R.N., M.A.

Dr. Faye is medical director, New York Lighthouse Low Vision Service, and attending surgeon, Manhattan Eye, Ear and Throat Hospital; Ms. Hood is administrative director, New York Lighthouse Low Vision Service, and director, Medical Services, New York Association for the Blind.

ABSTRACT: The development and present structure of the comprehensive Low Vision Service of the New York Association for the Blind are used as the basis for a full discussion of the operation of such a clinical service, including its positive and negative features. The clinic is administered by a medical director and by an administrator who coordinates the work of a staff consisting of ophthalmologists, optometrists, low vision assistants, volunteers, registrar, and receptionist. A separate Optical Aids Service stocks low vision aids which it sells by prescription to clinics, doctors, and patients within and without the agency. Referrals for special services are made to the other departments of the agency. Also described are the low vision examination itself, follow-up and training services, and the aid loan system.

No low vision clinic springs into existence fully equipped and fully proficient. The evolution of one agency clinic from its simple beginning to its complex present structure is worth sketching briefly since the evolution was brought about by an analysis of service and attempts to improve patient care.

New York Association for the Blind

☐ In 1953, the New York Association for the Blind started a research study to determine how low vision aids could be prescribed and used by a selected number of cases. From this came the study by Fonda (1956) on the first 500 patients. The need for aids was established immediately and the Lighthouse Low Vision Service was set up with the limited goal of examining partially sighted clients and dispensing aids. The Optical Aids Department was soon added to the clinic to remedy the delays and poor service inherent in ordering aids from widely dispersed sources. Teaching other ophthalmologists who were interested in low vision began early in the clinic's history. In 1963, when the clinic went on a data collection system (McBee), the first comprehensive success-failure statistics were compiled to analyze patient acceptance of aids. The relatively high failure rate was found to be related to haphazard training and follow-up examinations.

Developments in the 1960's

☐ The most basic reasons for failure were inadequate training in the use of devices and poor referrals for other services. The outgrowth of the analysis of the failure rate was the establishment of a comprehensive follow-up and training system done by a low vision assistant. Other agency services were added on a consulting basis or incorporated into the clinic's structure, including casework, rehabilitation, orientation and mobility, hearing tests, psychiatric and psychological testing, and neurological and pediatric consultation. The philosophy of the low vision clinic reflects the experience that a low vision service is not "just an optical aid," but a complex interaction of varying services, different for each patient.

The Present Service

☐ The Lighthouse Low Vision Service presently functions as a referral source for information and patient rehabilitation from within the agency, from community agencies, and from the medical profession. The program has the following goals: 1) to see each patient as an individual and evaluate his visual function; 2) to give appropriate aids, whether optical or nonoptical, with in-depth instruction and follow-up; 3) to refer him for other services, including more extensive medical, audiological, or ophthalmological work-ups (psychological evaluations, casework, orientation and mobility, and rehabilitation are available within the agency on direct referral); 4) to train ophthalmology residents and optometry students to recognize vision problems in their practice and to provide a view of a patient's life which is not highly visible in a hospital setting and to teach them a philosophy and an approach to low vision; 5) to provide ophthalmologists and optometrists with consultation, lectures, seminars, films, and exhibits about low vision; 6) to offer training programs for ophthalmologists, optometrists, and low vision technicians or assistants who are interested in acquiring new skills or updating old skills; 7) to keep up with the latest technical information and to provide a climate of creativity in the exploration of aids; and 8) to evaluate cases statistically on an annual basis.

Possible Sites for Clinics

Hospital

☐ Agencies for the "blind" are being forced by an awareness of a statistical shift in the proportion of partially sighted people to provide services for this majority. Therefore, a high-priority service would be low vision, either self-contained or available in a community center. The question arises as to the best location for this type of service: 1) academic (medical or optometric institutions); 2) general hospital providing health care in many specialties; 3) agencies for the blind and visually limited; or 4) private practitioner. The primary goal in the academic setting is on teaching students, with patient service secondary. The low vision clinic tends to be a small part of the eye department with limited service and poor access to rehabilitation services. A general hospital is primarily involved with volume, diagnosis, and treatment, giving low priority to the low-volume (i.e., non-money-making) special services. In contrast to the hospital center, which is geared to improving technology, speeding service, and cutting costs, the agency for the visually handicapped is geared to spending more time on a small group of people with a common problem.

Private practitioner

Agency

The private practitioner is limited in the amount of time, equipment, and scope of services he can offer an individual patient. Many patients seeking private care may be served by optical aids alone unless they need additional services. Here the private doctor does the initial evaluation and serves as a referral source to the specialized low vision clinic. An agency geared for a specific disability would, at first glance, seem to be a logical location for the low vision clinic. A low vision clinic in this location can assume part of the agency's obligation to provide the type of rehabilitation services needed by people who are not "blind," yet who are not fully sighted.

The Lighthouse Low Vision Service

☐ The New York Lighthouse Low Vision Service in its present form is not a *typical* model because of its size and range of comprehensive services. Our experience shows that the expense of staffing and servicing a low vision clinic has been worth the struggle to grow and prove the ultimate worth of the service. The clinic has existed for over 20 years, has good support, and no longer struggles for recognition from the agency or the medical community. Regardless of our "establishment" position, we have features in common with any agency-based clinic, both positive and negative. The positive features of such a clinic include: 1) patient rehabilitation is a primary goal; 2) multiple services available in all areas of rehabilitation and counseling; 3) high priority on the hierarchy of services because of the rehabilitation connotations; 4) continuity of service to the patient by one examiner; 5) less financial restriction (private donations and endowments available without the red tape of grant applications); 6) access to sympathetic administration; 7) staff politics are at a minimum; 8) favorable climate for access to consultants; and 9) provides a neutral ground for referrals because basic medical treatment remains with the referring doctors. The negative features include: 1) public image is that the agency takes care of blind people only, which may delay referral; 2) psychological impact on patient who is being referred by his doctor (fear of implications of impending blindness); 3) cost to patients may be higher because of a lack of insurance coverage for services; 4) agencies, since they do not deliver medical treatment, must be careful to keep the patient in contact with medical care; 5) agencies may tend to have a paternalistic or traditional program with a hierarchy of services in a "package"; and 6) innovative material may tend to be looked upon with suspicion or as a threat to the system, whereas hospitals stress improvements in technology.

Positive features

Negative features

Clinic Structure

☐ The clinic is located within the New York Association for the Blind in its Medical Department and is responsible to the general administrative plan of the agency. There are two examining rooms and two follow-up rooms. Each room is self-contained, quiet, and away from the main thoroughfare. The examining rooms are equipped with *standard* diagnostic ophthalmic instruments and low vision aids consisting of spectacles, magnifiers, and telescopes from leading manufacturers (*Catalogue of optical aids*, 1972). Each follow-up room has a work table with a non-glare, light brown formica top, lamps, reading material in magnetic plastic holders on the wall, writing equipment, a peg board displaying the most used optical aids arranged in order of diopters, a spectacle kit, and a closed-circuit television reading aid. An adequate examination can be done in a room which is ten feet in one of its dimensions.

Clinic administration

The medical director is an ophthalmologist who functions as a clinician and instructor. She works with the administrator in analyzing the overall functioning of the clinic, including problems, policy statements, investigation of aids, communication with other clinics, and consulting on specific cases on demand.

Administrator

The administrator of our Low Vision Service is a registered nurse. She has the typical problems of coordinating a service made up of part-time consultants. To synchronize multiple clinic sessions, resident teaching sessions, in-service programs, and seminars is a full-time job. General administrative duties include doing the annual budget, keeping statistics, ordering and maintaining equipment, and seeing that the clinic runs smoothly. The administrator and director have regularly scheduled meetings to keep up with the administrative plans, the medical policies, and the problems that arise in day-to-day functioning. The administrative assistant is a skilled secretary who also assumes the responsibility for the support staff and assists the administrator in handling the many details of the clinic's program.

Ophthalmologists

The low vision ophthalmological staff consists of six ophthalmologists who each examine patients one half-day a week and instruct residents in ophthalmology in low vision. In addition, there is an ophthalmologist on call for extra clinics or vacation rotations. (This person is preferably a recent graduate from a resident training program). The ophthalmologists see all new patients and are responsible for confirming diagnosis by appropriate diagnostic techniques. If there is evidence of active pathology, recent changes in acuity, or need for further diagnostic work-up, the low vision examination is discontinued and the patient is referred back to his own ophthalmologist. No treatment is done in the clinic. The ophthalmologist is responsible for diagnostic evaluation and interpretation of eye pathology and terminology to the staff, particularly the relationship of pathology to the types of aids. He makes an initial suggestion of aids to be tried in the instruction period.

Optometric staff

The Lighthouse optometric staff sees patients two half-days a week and instructs optometry students in low vision aids. A program is currently in operation (since September 1974) with one staff and one consulting optometrist from the New York College of Optometry. The goal has been to incorporate an optometrist into the clinic as a clinician and instructor in optical principals relating to aids and equipment. The optometrists will be guided by the same referral principals as the ophthalmologist, namely: 1) to help review factors involved in aid-related failure; 2) to advise on special aids including the bioptic telescope; and 3) to help train the staff in accurate selection of types of aids. Staff refers patients who need complex or specially made aids. Given a reasonable amount of interaction and definition of roles, there is no reason why ophthalmologists and optometrists cannot function to their mutual advantage in a low vision clinic.

Low vision assistants

The low vision assistants in our clinic are five nurses with a background in public health, one of whom also functions as the administrator of low vision services. The nursing staff has been trained by ophthalmologists to function as low vision assistants in addition to their duties in the overall health protection of the agency's clients. As low vision assistants, they pointed up the original need for, and have been responsible for, the development of the follow-up and aid loan programs. The situation in the Lighthouse clinic is unique in that the nurses who function as low vision assistants have had an unusual amount of experience in low vision work and a great deal of exposure to the special problems of low vision patients. Other clinics will gravitate toward their own description of this important staff member and may draw from many other professional groups.

Registrar, receptionist, volunteers

The registrar has a responsible position which involves not only making appointments but also filling out initial registration forms. After a patient is examined, the registrar checks the chart to be sure the data are complete. From this data the statistical card may then be set up, the information for referral forms and letters may be transmitted accurately, and the medical payment forms can be filled in. Our Medical Department has a receptionist who assists the registrar and helps out wherever she is needed. In our busy clinic, volunteers perform many practical and helpful assignments. They also fill a useful social function, making patients and visitors comfortable.

Optical Aids Service

☐ The Optical Aids Service is separate from the low vision clinic. From its original intent to supply the clinic with a few aids, it grew to be a central source of optical aids for clinics and practitioners all over the world. Aids are sold by prescription to clinics, doctors, and patients, including our own clinic patients whose only advantage is proximity. The manager functions as a supplier of all optical aids that have been clinically tested and recommended by our clinicians. The department is a distributor for Bausch & Lomb, COIL, American Optical Company, Selsi, and Keeler. Many lenses are stocked as single items from small manufacturers. An assistant and a billing and order clerk round out a staff required to cope with the ever-increasing volume of orders.

Special services

Special services are available to the clinic on a consultation basis, including: 1) staff internist, pediatrician, psychiatrist (part-time); 2) psychologists who administer tests, assist in setting up questionnaires for research projects, and evaluate reading ability on a closed-circuit television reading aid (some of the psychological testing is done on the CCTV); 3) audiologist (part-time); 4) social workers, available for casework and group work; 5) orientation and mobility service; 6) rehabilitation service; 7) library services; and 8) recreation services.

Funding

☐ The clinic is supported by the Lighthouse. While the agency has never charged a fee for clinic services, this policy has been recognized by the Board of Directors as unrealistic. They have therefore authorized a fee schedule to be worked out in accordance with third-party payment procedures and this schedule is expected to be put into effect shortly.

The Optical Aids Service provides some pre-mounted spectacle aids, hand and stand magnifiers, and loupes. When there is a prescription involved, a patient is sent to a local optician, preferably one who is familiar with low vision aids. Designs for Vision or Keeler prescriptions are ordered through a local optician or directly from the company (*Catalogue of optical aids*, 1972).

Research projects are incorporated into the regular clinic structure in the clinic of the doctor initiating the program.

Examination of the Low Vision Patient

☐ The staff ophthalmologist is responsible for confirming diagnoses by report, history, observations, and examination (including dilation of the pupil and applanation tonometry as needed). The low vision examination also includes history; distance vision acuity testing; near vision acuity testing; examination of external ocular structures; ophthalmoscopic (funduscopic) examination (direct and indirect); biomicroscopy (slit lamp examination) as needed; visual fields examination on tangent screen, perimeter, and Amsler Grid as required by an individual case; color vision testing; refraction; prescription of special lenses, aids, and devices; and recommendations for training and instruction to be carried out by the low vision assistant.

Prescription of aids

Low vision aids, as they are commonly called, are devices that allow a person with subnormal vision to appreciate an enlarged image. Magnifying, or convex, lenses may be set in a spectacle frame, held in the hand, or placed directly on a page. A telescope is another type of optical device used in low vision for distance and reading. Closed-circuit television provides electronic magnification for reading and writing. All of these aids are prescribed or made available for trial for patients seen by the Low Vision Service. Aids are prescribed according to the type of eye disease, the severity of the pathology, and the patient's need.

CCTV reading aids

Spectacles make up the largest proportion of low vision aids prescribed or given out on a trial basis, with hand magnifiers and telescopes next in that order. The clinic also maintains five of the currently available closed-circuit television aids so that patients who have heard about them or whose doctors have recommended their possible use come in to try the systems and learn the limitations inherent in the devices before they buy such an expensive aid. CCTV is prescribed for patients whose acuity is too poor to benefit from an optical aid or for those who have a particular need to supplement their optical aid with another type of magnification (students, job requirements). Reading speed may be somewhat greater for specific types of vision loss, especially restricted fields. For vocational use, CCTV may enhance employability. However, television is never considered until the complete low vision examination has explored the use of all of the other types of aids. More patients reject television after a thorough trial than accept it. It should be prescribed only after throrough analysis of the case, adequate trial, and a period of training.

Follow-up

☐ After the examination and a tentative prescription, which takes about 40 minutes, the assistant takes the patient (who is generally not too fatigued) to the follow-up room. This instruction period starts with the type of aid suggested by the examiner. During this time with the assistant, the patient is also encouraged to express his doubts and needs in an informal manner. At the same time, of course, the worker is constantly assessing the patient's reactions. It may become apparent that the patient cannot accept the prescribed aid. In this case, the assistant begins to explore possible reasons for rejection. The patient cannot be expected to have instant confidence in the process. Sometimes, it takes a while to accept the idea of using vision in a somewhat awkward way.

Training

Intelligent patients whose sight has been adventitiously reduced do not need elaborate reading retraining if they read normally before and want to read again. They do better and respond more quickly to material of interest to them whether it is a personal letter, the *Reader's Digest,* a family photograph, or the *Wall Street Journal.* It is not necessary to restrict an eager patient to reading ten minutes a day when he may be able to read eight hours. Reading restriction may even subvert our philosophy that reading will not hurt the eye.

Limiting training

It has been our experience that too much time spent with a patient leads to boredom and fatigue. The assistant who sees the patient too many times may develop a relationship requiring the type of counseling and support which is the role of the social worker or of a teacher. Introductory training in the use of aids should be practical and direct, concentrating on the use of the aid and the analysis of the prescription. Is it the correct aid or is another type more suitable?

The Aid Loan System

☐ The system of lending aids was established in 1968 for the purpose of providing patients with an added incentive to explore their need for optical aids (Faye et al., 1975). The Lighthouse statistics show that the service's success rate rose from 60 to over 80 percent when a loan system was initiated. A basic loan system consists of an assortment of spectacles ranging from +6.00, + 8.00, and + 10.00 half-eyes (with appropriate base-in prism) through 20 diopter spheres. Above 20 diopters, 6×, 8× and 10× AO microscopic or Igard hyperoculars are used. Our lenses are purchased from the Optical Aids Department at the list price. Hand and stand magnifiers are also available, as are a few telescopes including Designs for Vision 2.2 × and 3 × wide-angle telescopes. The simplest system could run from $375 to over $1,000 based on the complexity and number of aids.

Pitfalls of the loan system

The loan system has some built-in pitfalls. For many patients, the idea that they are somehow not "ready" for a prescription may create a lack of confidence or a suspicion that all is not well, particularly if they felt that the aid had helped them. Assistants may tend to use the "loaners" as a substitute for a decision. When both patient and worker become indecisive, the dynamics are lost, the loan library is depleted, and the clinic becomes a maze of too many follow-up patients. The loan system is not a substitute for training. Patients need a certain amount of direction and control before they can be sent home to try their aid. The loan system should not suspend the making of decisions. At some point the worker and doctor have to make a decision about which aid to prescribe. We have found that within two follow-up visits, the average patient will accept or reject what is offered.

Not a substitute for examination

Intriguing as it may seem at first glance, a low vision aid loan system should never be established as a service disconnected from a low vision clinic. It should also never be used as a trial-and-error substitute for a low vision examination. In understandable exasperation with the lack of low vision facilities, some educational systems have chosen this round-about route for providing low vision care for partially sighted students. It is dangerous to consider giving low vision aids without professional guidance. The provision of an aid on a trial-and-error basis cannot be isolated from the real possibility of overlooking active pathology or the need for an excellent refraction which might restore vision *without* a low vision aid. It would be preferable to take the longer route of demanding a low vision service from the community resources.

The loan system is an integral part of every clinic when it is used to reinforce the doubtful patient or to explore specific situations at home or work. It also serves to set up a definite follow-up period of two weeks for further training and analysis of the way the aid was used. Most patients receive their final prescription at this first follow-up visit. Other patients with more complex problems may have several visits at two-week intervals.

Referral Services

☐ The follow-up and loan period is the time during which other services are requested from the social worker or mobility instructor if the patient is having problems. Timing is important in requesting consultations for the patient. Even though he has many unexplored needs, a barrage of services too early may not help him. When too many advisors are involved before the status of the aid is clarified, it may also set up conflicts and confuse the patient. However, it is also important to be alert to the patient's personal problems which may underlie and interfere with the successful use of the aid. In some cases, early referrals will be made for patients who need these services *before* they can manage learning to use an aid.

Summary

☐ Agency-based low vision clinics offer certain advantages to partially sighted people seeking rehabilitation. Obviously, the greater the agency commitment to services for the partially sighted, the stronger the clinic will be. The principle advantage of an agency clinic is easier access to services above and beyond the low vision aid. A low vision clinic can be more effective if the multiple needs of patients can be met with multiple services. Low vision services in hospitals, institutions, and private settings tend to be isolated and may fail if they do no more for patients than prescribe aids. The successful clinic in these settings contracts for other services for the low vision patient. Every low vision clinic will be set up differently, depending on its location, basic clientele, relationship with the eye-care community, and access to funding.

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Blind Lawyers to Hold July Meeting in Mobile

The sixth annual convention of the American Blind Lawyers' Association (ABLA) is to be held July 20, 21, and 22 at the Admiral Semmes Hotel in Mobile, Alabama. The convention program has been designed to provide a full exchange of ideas, including seminars on aids, devices, and techniques that are useful in the office, classroom, and courtroom; lectures by blind lawyers; experiences in obtaining public appointive or elective office; and opportunities for employment in government agencies, private corporations, and as general and specializing practitioners. There will also be general discussion of the blind lawyer's place in the legal profession. All blind lawyers and blind law students are welcome, whether or not they are members of the ABLA. To register for the convention, or to obtain more information about the association, write to Philip E. Pofcher, President, American Blind Lawyers' Association, 749 South Street, Roslindale, Massachusetts 02131, or call him at 617-325-0900.

Established in 1969, this national nonprofit organization aims at providing blind lawyers and blind law students with a forum for discussion of their special problems, maintaining law libraries for members' use, and producing and disseminating legal material in braille and recorded form.

The Model Low Vision Clinical Service: An Interdisciplinary Vision Rehabilitation Program

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ABSTRACT: An optical aid is not an ordinary spectacle correction which can be easily prescribed and comfortably worn. A comprehensive service program utilizing optical aids consists of an interdisciplinary vision rehabilitation program. The efforts involved in the vision rehabilitation service must be an integral part of the rehabilitation program for the whole person. The services of the optometrist, ophthalmologist, low vision technician, social worker, mobility instructor, reading specialist, psychologist, physician, vocational counselor, vocational placement specialist, special education teachers, nurses, and recreation and daily-living-skills instructors are all important to the service program. Each of these individuals can make a significant contribution to the patient's success in using an optical aid and the enhancement of his ability to function visually.

The Ideal Program

Recently, more agencies for the blind have become interested in providing low vision clinical services for their clients. This indicates a long overdue recognition of the needs of the partially sighted individual. The best low vision care program is one which involves a variety of professionals dealing with these unique needs. No one person or professional group can provide an optimum low vision program for the partially sighted. Ideally, a clinical program should involve the services of an optometrist, ophthalmologist, low vision technician, social worker, mobility instructor, reading specialist, psychologist, physician, vocational placement/training counselor, special education teacher, nurse, recreational and/or activities-of-daily-living instructor, and an administrator for coordinating the services of these professionals.

The local agency as a desirable site

Most agencies for the blind already have this broad spectrum of professional care accessible to them. Because of this, agencies are highly desirable locations for the development of low vision service programs. The major advantage is the ability to handle most of the individual's physical, emotional, and social needs under one roof. This type of rehabilitation allows for a free exchange of ideas and programs between professionals.

Developing an Interprofessional Approach

☐ While the availability of interprofessional care is a distinct advantage of the agency for the blind, it can also be a handicap. It is one thing to advocate professional interaction and quite another to achieve it. The professionals serving the needs of the partially sighted must adopt the attitude of contributing to the total rehabilitation program rather than controlling. Everyone must be working toward a common goal—the client.

Defining the program

The problem often faced by agency administrators is in defining this total program. Questions arise as to who should provide services, where they are available, and what role each discipline will play. In an attempt to answer these questions, the following concept of a model low vision service found in an agency serving the partially sighted is presented. This overview should be viewed as a philosophical guideline only. Obviously the needs and resources of each individual agency will require substantial modifications to the model.

A philosophy of low vision service

The model is based on the philosophy that the low vision service should be an asset to the existing rehabilitation program and not the reverse. The low vision service should be designed so that it serves to maximize the client's ability to function visually within the vocational or other rehabilitation services of the agency. The other services must also be willing to modify their programs to take advantage of the optical aids prescribed. A number of professionals, as mentioned above, are necessary for the provision of services. The professionals involved in the program might act and interact as described in the following pages.

Ophthalmological Consultant

☐ The agency needs an ophthalmological consultant. Before optical aids are considered, it must be assured that all medical/surgical treatment potentials have been evaluated. The ophthalmologist can relate to the agency the exact cause of the vision loss and the expected progression of the disease process. Typically, the ophthalmologist will work out of his private office or hospital facility for the initial evaluation. A more sophisticated instrumentation is usually available to him under these circumstances. Each patient should receive a new ophthalmological examination prior to the initiation of the low vision examination. The ophthalmological consultant must be an enthusiastic supporter of the low vision program and interact with the entire staff of the agency. The staff needs a lucid explanation of his findings if they are to be of any value in the subsequent low vision and training services to be offered to the client.

The low vision examination

Either an optometrist or an ophthalmologist can provide low vision examination services. Whichever professional is chosen for the particular facility, the choice should be based on the individual's experience in working in this area (this does not mean a "personal" testimony as to their interest or expertise). They should have some formal training in low vision care in their educational or professional background. For instance, most optometrists have received basic training in low vision in their professional training program. More importantly, they must be willing to make a time commitment to the program. A clinic cannot run smoothly with an examiner who shows up when it is convenient for him. A definite commitment to the program must be made.

Case history

A comprehensive case history is the focal point of a low vision examination. It is here that the examiner determines the patient's needs, desires, motivations, and, most importantly, his feelings and attitude toward his visual handicap. This information can be collected by several members of the vision rehabilitation team. However, the examining doctor should review all previously collected data with the patient so that he has a firm, first-hand understanding of the "person" in the chair.

A thorough refraction

The examination service should include a *thorough* refraction. Many people are legally blind because someone did not bother spending a little time doing a good refraction and finding a significant amount of astigmatism or nearsightedness. This means spending half an hour on the refraction alone if necessary. After the best distance prescription has been determined, the clinician can now proceed with the evaluation of optical aids. In addition to the refraction, which is an evaluation for conventional corrections, consideration of microscopic and telescopic aids must be conducted. At the end of the first visit, the clinician should decide on a tentative prescription, relevant to the patient's vocational or avocational needs. This aid should be loaned to the patient for training in its use. The doctor should relate his findings to the rest of the staff so they may use the information in their respective training/service programs. When an optometrist is providing this service, there should exist close communication between the optometrist and the consulting ophthalmologist.

Scheduling

It is best if the examiner spends at least two hours with the patient on the first visit. Only four new examinations should be scheduled for the clinician per day. This, with the follow-up visits, will be a heavy load if a proper service is being offered. As much of the examination as possible should be done in the agency. This lends itself to the involvement of the total staff in the low vision service. Communication can be more direct and frequent regarding client problems and greater input from the staff in the determination of the prescription can be expected under these conditions.

Prescriptions

Very few patients should be given a final prescription until a training period has been completed and patient reaction to the trial device has received input from the staff involved with the patient. The consulting doctor must learn to take advice from the staff regarding his prescriptions. This is sometimes hard to do!

Low Vision Technician

☐ A low vision technician can be a graduate of an optometric technician or ophthalmological assistant training program or an informally trained mobility instructor or nurse already on the agency staff. The formally trained individual can provide chair-side assistance to the doctor on examination days and continuity of services in his absence. In essence, this is a full-time person who can oversee the program. This individual will be responsible for screening new clients to determine if they are potential candidates for optical aids, working with the doctor on examination days, coordinating the patients' training programs with the staff, providing in-office training sessions in the use of the optical device, being responsible for ordering and verifying prescriptions, and maintaining a loaner inventory. A myriad of third-party forms must also be kept updated.

Alternative arrangements

This person must have a strong background in optics, ophthalmic lens design, and patient care. Some of the smaller programs may not be able to afford the luxury of a full-time technician and, in this case, the appropriately trained mobility person, social worker, or nurse may provide a portion of these services in conjunction with their own professional responsibilities. The less training the technician has, the more the doctor will have to do himself, resulting in less time spent with the patient.

Individualized training programs

The most important responsibility of this person is the development of optical aid training programs for each patient. This training helps insure that the aid will be used effectively. This will be done in conjunction with the other instructors in the agency. A person who has not read in ten years must not only learn from the technician how to use the aid correctly, but he must also learn from the reading specialist, special education teacher, etc., how to read all over again. It takes time to learn to adapt to a two-inch reading distance of a microscopic aid or the 12-degree field of a telescope. If the patient has a problem with the aid in one of the agency's training programs, the technician can provide the needed information to modify the aid or program, allowing the patient to function more comfortably or proficiently. The technician serves as an important link between the examining doctor and agency staff.

Agency Specialists: Social Worker

☐ The agency social worker should be familiar with the goals of the low vision examination. A familiarity with various types of optical aids will benefit the social worker in interviewing patients. The major responsibilities of the social worker are to aid in developing a realistic expectation within the patient of the low vision examination (the patient should not be looking for a miracle cure); to help determine the patient's needs and motivation for using aids; to review the examination procedures with the patient after the service has been completed (this insures that the patient has a thorough understanding and a good positive concept of the impending treatment program. Many concerns the patients have regarding their vision are reported to the social worker in this post-examination interview that were not reported to the doctor or technician. Also many patients express additional needs and desires that were not brought out in the examination.); and to assure the patient that all appropriate services offered by the agency will be received and that nonagency services will be provided along with funding resources when necessary. The social worker is vitally important to the patient's understanding of the services being offered and to making the treatment program relevant to the patient's needs and desires.

Mobility instructor

The use of low vision aids in mobility training has not been fully exploited. There exists a wealth of information on the utilization of limited visual cues for mobility purposes. For example, has anyone ever considered using driving telescopic lenses for bicycle riding? It is this kind of imagination that leads to an exciting program and results in optimum vision function. It takes the expertise of the mobility instructor and optometrist/ophthalmologist working together to make this type of program productive. The examiner now thinks of mobility during the evaluation and likewise the mobility instructor thinks of optical aids during the training program.

Communication specialists

Many agencies have communication specialists on their staff and these people play an important role in allowing the patient to receive maximum benefit from a near-point optical aid designed primarily for reading. There are patients who have never functioned in print that must be taught to read. They may know how to use the aid correctly, but it is useless or at least limited if they do not possess any reading skills. Others have not read for years and need to refresh their reading skills. A person who does not receive training may only use the aid for reading occasional labels. With training, this same person may learn to read for pleasure. A whole new world may be opened up because of this interdisciplinary approach to care.

Psychologist or psychiatrist

Access to a clinical psychologist or psychiatrist can be an asset to the vision rehabilitation of a particular individual. Many people have severe emotional problems as a result of their "blindness." It can range from dependency on family members to a real fear of being sighted. Loss of vision can be traumatic and proper professional care is a necessary part of the total rehabilitation program. Again, the individual selected to serve as a consultant should be familiar with the objectives of the vision rehabilitation program.

Physician

A consulting physician should be available for a myriad of health problems. Systemic disorders are often manifested as ocular abnormalities (diabetes, hypertension, tumors, etc.). Medical consultation for these disorders should receive attention prior to the completion of the optical aids program. Poor health will also affect the individual's motivation in the training program. The physician should have some concept of the total rehabilitation program to be as effective as possible.

Other specialists

These are the individuals who might be considered in providing direct services in the low vision evaluation and vision rehabilitation program. Many agencies have other specialists associated with their program. These people provide services which are used by the patient and can affect the successful use of a prescribed aid. Nurses, special education consultants, vocational rehabilitation counselors, vocational evaluation advisors, recreation instructors, and daily living activity instructors all have services to offer which assist the patient in becoming an independent member of his society. These people should be encouraged to participate in the low vision staffing of a patient whenever possible. They will probably have very important observations to offer regarding the patient's ability to function independently and his motivations and vision needs within specific programs.

Program Director

☐ Somebody has to oversee this whole program. The title typically used for this overworked individual is program director. It is up to the director to see to it that everyone is doing their job, that proper communication channels are kept open within the agency and in the community, that proper funding of the program is maintained, and that changes are allowed to occur smoothly within the program. It is a very important and time-consuming job.

Weekly staffings

The weekly staffings of all active cases is probably the lifeline of the program. The director should see to it that this staffing does not become a "something we have to sit through once a week" session. It should be handled in such a way that everyone participates and is *listened to*. The more staff that participates, the more exciting the program will be. This will also lead to a better patient evaluation and treatment program.

The director must be committed to the continual development of the low vision clinical program or it will fall apart. It is impossible to get ten or 12 people to work together in complete harmony without a lot of strong supervision. It can be a headache at times, but one of the most rewarding headaches an administrator can have when it is working right.

Initial expenditures

The low vision facility can exist comfortably within an existing agency for the blind. Within the facility, an examination room measuring at least ten by 15 feet with appropriate variable lighting and a smaller training room will be needed. An optimum expenditure of $18,500 for equiping these rooms with diagnostic equipment and low vision aids is suggested. In addition, it is desirable to have access to a more sophisticated institutional clinic or hospital facility where a broader, more comprehensive diagnostic instrumentation can be made available. These expenses can vary considerably, depending on how extensive the low vision program is to be. These figures represent a reasonable expenditure which will allow a comprehensive low vision service within the agency. Salaries and consultation fees must also be considered. For the training program, an inventory of devices that can be loaned to the patient on a trial basis should be available. An adequate inventory for a clinic serving 300 patients a year will require an additional $3000 for aids. This is probably the most important aspect of the program.

Staff Attitude

☐ The low vision service is simply a matter of a group of professionals working together in an effort to train a patient to utilize his residual vision to its maximum. Each professional must concern himself with the development of his skills and not worry about someone else taking over his job. A competent person can never be replaced by someone even from a closely related field. If the technician or mobility instructor performs some of the optometrist's duties, it simply leaves him more time to develop his skills in other areas of optometric patient services. The group must be flexible.

Computer Used to Translate Music Into Braille

P. Howard Patrick, professor of music at the American University, Washington, D.C., has found a quick way to translate sheet music into braille through the use of a computer. To the blind person, this means that he can have his music in 15 minutes instead of waiting for up to six months while a translator laboriously brailles the music by hand. Under Dr. Patrick's system, the music is translated into a computer code and stored in the computer's memory bank. A braille music conversion program, developed by Dr. Patrick and Patricia Friedman, a research assistant, is then used to produce braille copies instantaneously. Once a piece of music literature is translated, it can be printed in braille over and over again.

At present, Dr. Patrick's system is limited to vocal music, but he sees the inclusion of keyboard and orchestral music within four or five years. He feels that the present method, using the Intermediate Musical Language and Music Information Retrieval (IML-MIR) system, will form the background for the development of a more comprehensive code. He and Ms. Friedman are pursuing grants to continue work in the field.

Dr. Patrick's interest in braille music came about accidentally. "During a conversation with a blind music student," he says, "I began to realize the problems of finding music in braille. I decided to explore using the computer as a way to help. I was already using the computer with music. Since 1968 I had used it in sound synthesis for composition and in 1971 developed a system for music analysis by computer."

For further information, write to Dr. P. Howard Patrick, Department of Music, American University, Washington, D.C. 20016, or call him at (202) 686-2162.

Itinerant Low Vision Services

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ABSTRACT: The itinerant education concept proves helpful in providing visually impaired individuals with comprehensive low vision services, because visual screenings, training, and follow-up care can be provided on a regular basis within the student's own environment. Close cooperation among low vision clinic staff, classroom teachers, parents, ancillary personnel, and low vision educational consultants develops quality low vision service through a professional team approach. Such an approach is presently functioning successfully in the state of New Hampshire. To implement this approach, itinerant teachers with training and experience in the field of low vision are badly needed. It is recommended that universities, in cooperation with low vision clinics, seek ways of implementing such training in their present programs.

The Itinerant Teacher

Among the many questions which constantly plague professional teachers of visually impaired children, especially itinerant teachers, in trying to provide adequate services for their students is what part the teachers can play in providing them with low vision services. There is little problem in finding those students in need of such services, for as the itinerant teacher travels to different schools, he comes in daily contact with school administrators, nurses, counselors, program personnel, doctors, and other support personnel who, once informed of the service, are able to refer students who may benefit from a low vision evaluation and training. The itinerant teacher must then be able to recognize and evaluate the student's visual needs and functioning before a significant program can be planned.

Careful observation

As the itinerant teacher observes the student's visual weaknesses, he must remember that it is equally important to note his visual strengths. Everything the student can or cannot do may be of importance in the establishment of future evaluation and training processes. "Observation of the functional vision of a child is more important than acuity" (Faye, 1970, p. 142). Gathering information from other school personnel is a necessity and the teacher should talk with all personnel familiar with the student, including occupational therapists, orientation and mobility specialists, psychologists, social workers, etc. It will not be possible to determine the best aid for the student solely on the basis of their observations, but they will help the clinician in that task.

Screening

☐ After a low vision individual has been located and pertinent information has been gathered, the next step is a thorough low vision screening. This includes an assessment of the child's distance and near point acuities, a central field test, and a check for color blindness. Both the distance and near point assessment include the use of low vision aid magnification to determine if acuities can be improved. Through this screening process, the teacher can make knowledgeable decisions about whether the student can be helped by known low vision aids, how various lighting affects his functional vision, the effect of his field on the use of an aid, and his general motivational reaction to the aids. This information, combined with the functional vision evaluation, will provide the educational specialist with invaluable immediate knowledge concerning teaching techniques for the classroom teacher, the development of program objectives, and work with parents. However, the low vision service must not be allowed to stop here, for, as Jose, Cummings, and McAdams point out in the preceding article, optimum low vision care requires a broad spectrum of professional services. No one person can provide competent care alone.

Referral to a low vision clinic

If the student's near or distance acuity seems to be improved by an aid, or if a central field test locates scotomas or a more limited field than noted on the school eye report, referral to a low vision clinic should be made. If the aids do not seem to help, but the functional vision observations seem to indicate that vision is being used in daily activities, then referral to a low vision clinic is called for. If there are any nagging doubts as to whether or not a referral should be made, by all means the professional services of a low vision clinic should be sought. A thorough clinical evaluation may help rectify an eye problem that has suddenly worsened and that was picked up by the initial screening, e.g., a severe loss of acuity may indicate that a condition such as cataracts has progressed since the last eye examination.

Value of screening

The question arises as to why the teacher should attempt to undertake measuring the acuity and other facets of the student's vision when the low vision clinic can provide that service? Besides the previously stated benefit to the teacher of understanding the student's present visual abilities, the screening also provides invaluable assistance to the low vision clinician.

Low Vision Educational Consultant

☐ Presently the state of New Hampshire is able to provide services for its visually impaired children through the direction of two itinerant teachers experienced in low vision training. Children with recognized visual problems who might be helped by low vision aids are referred by itinerant teachers throughout the state to the low vision educational consultants who then implement the screening, referral, and training process. The first step is to talk with the referring teacher to gather as much information about the student as possible. The consultant and the teacher then establish a time for the low vision screening. At the time of the screening a thorough history is taken from the student, the parent, the itinerant teacher, and other involved school personnel. The acuities and field are checked and, on the basis of all this information, a cooperative decision on whether to refer the student for a complete low vision evaluation at the Gundersen Eye Clinic, Boston University Medical Center (Friedman, Tallman, & Asarkof, 1974), is made. The referral may be immediate or it may be delayed in order for other data to be obtained. The screening is done in the low vision educational consultant's mobile unit. The use of the mobile unit is invaluable in providing both itinerant educational services and low vision services (Coté, 1974; Sibert, 1965).

The visit to the clinic

Assuming a referral has been made, the low vision educational consultants then arrange for a visit to the low vision clinic, submit the screening form, an eye report (no older than six months), and a referral form to the clinic, and inform the itinerant teacher of the examination date. The referring itinerant teacher assumes all responsibility for locating acceptable funding (Lions Clubs, welfare, parent groups, etc.) if the student's family is unable to cover the cost. He also arranges for transportation and confirms these details with school personnel and the parents. Every effort is made to facilitate the parents' accompanying the child to the clinic. The itinerant teacher must attend and the low vision educational consultants are also present at the clinic to facilitate the flow of information to the clinicians and to handle any problems that may arise. All of the above-named personnel sit in on the student's intake and examination and are encouraged by the low vision clinic staff to comment or raise questions. A thorough examination takes approximately two hours; however, the short attention span of children may necessitate more than one visit.

Finding a good clinic

Another question arises now. How is a good clinic located? The question is too broad to be answered here, but a few hints may help. The National Society for the Prevention of Blindness (1973-74) has published a directory of low vision services in the United States. It is an invaluable source. A clinic that encourages and asks for involvement from the student's parents, teachers, and other professionals knowledgeable about the student's needs is most desirable. The cost of the examination is also a major factor. Often the university-housed low vision clinics offer the best rates in examination fees. However, never sacrifice quality for cost. Talking with local vision specialists familiar with services in the area or contacting local professional medical associations may also provide beneficial information. The important factor is to gather as much information as possible upon which to base the selection.

Prescription of an Aid

☐ At the completion of the examination, unanswered questions should be clarified, a copy of the examination report obtained, and arrangements for lending the recommended aids made. If the clinic does not have an aid lending inventory, it will be able to provide the manufacturer, dispensing agent, and cost of the low vision aids. Purchase through the clinic may even be arranged.

Aid loan system

New Hampshire has implemented a procedure for the purchase, housing, and dissemination of low vision aids for children. This eliminates the delay between the low vision clinic examination and the delivery of the aid. Aids are sold to the individual student and may be returned for a full refund or exchanged for a comparably priced aid should the training process show the recommended aid to be inadequate or a change in the child's vision necessitate an exchange. If the student's family is unable to afford the aid and the itinerant teacher is unable to find funding for its purchase, the aid is donated to the student. The added advantage of an in-house low vision aid inventory is that many low vision clinics have a mark-up price on the cost of their aids. This is done in an effort to compensate for the loss or breakage of their loaned aids. Much time, aggravation, and money can be saved through the in-house aid library. Careful selection should govern the first stocking of the library; low vision clinics are generally able to provide information on the most commonly used and recommended aids as a guide for purchasing the initial stock.

Training

☐ After the screening and the evaluation comes the most important aspect of the low vision program—training. "The primary goal underlying the rehabilitation of people with low vision is to enable them to function in the visually oriented environment as 'normally' as possible. In order to achieve this goal, it is often necessary to provide some type of aid which reduces some of the disabilities characteristic of the impairment." (Kelleher, 1974, p. 99) Without training, the syndrome known to low vision clinics as the "dresser-drawer syndrome" may arise, for without knowledge of and practice in the use of the aid, too many individuals find it more convenient to keep the low vision aid in the drawer instead of near their eye.

A cooperative effort

While it is not within the scope of this article to detail the many ingredients of a good individualized training program, certain facts must be kept in the foreground as we approach the situation. The successful use of a low vision aid will require tremendous effort by both the student and the teacher. The teacher may obtain information on using the aids from the clinician, but he will gain the most by taking the aid home and using it for a few hours. He will then be able to relate more realistically to problems that arise as the student begins to use the aid. This also helps give the student the important feeling that he has well-informed support and empathy from his teacher. A knowledgeable assessment of lighting factors in various situations where the student may wish to use the aid is also crucial. Parental support and understanding of the aid will likewise prove worthwhile in motivating the child.

Helping the Classroom Teacher

☐ By all means the student must not just be handed the aid. A few days of familiarization with the aid in the itinerant teacher's class will facilitate a smooth beginning to training and provide the teacher with information about when, where, and how the child can best benefit from its use. Activities that should be in these first sessions are working with the student in his classroom while no one else is present, locating optimum lighting conditions, and finding the best seating location for use of the aid in the classroom. The advantage of the itinerant low vision service is particularly apparent here, as it allows the student the opportunity to practice using the aid in his home environment. When the child is totally familiar with the aid and its use, the training process is explained to the classroom teacher. The optical properties of the aid, the conditions under which it is to be used, the approximate length of the training program and the teacher's role in it, and the formulation of an approach for involving the student's classmates in the overall program are all discussed. It is extremely important that the student be aware of the information disseminated to the classroom teacher and the procedures discussed. In this way any problems the student foresees can be corrected and the tendency for the student to misuse the aid in the classroom will be minimized. The training program must not become an entity unto itself but must be incorporated into the itinerant teacher's educational services to the student.

Visual learning

Training should consist of not only aid usage, but also visual learning. Human beings learn to use their visual sense through near point and distance viewing, exploring, and experimenting with their environment. Eye-hand coordination, tracking, object recognition, etc., are learned activities. Visual stimulation games and devices will greatly enhance the student's degree of visual functioning through learning to use his residual vision better. In general, it can be said that while vision aids will increase the individual's visual acuity, low vision aid training will increase residual visual functioning.

Practice in different settings

Training must be provided in a variety of environmental settings and situations, but begins with functional use in familiar surroundings and progresses to unfamiliar areas. This approach is based on the successful educational techniques employed by most orientation and mobility specialists, i.e., from the familiar to the unfamiliar, basic to complex, each lesson built upon the previous lesson. The ultimate goal is for the individual to develop the ability to use his vision to his best advantage in *any new situation.* Learning transference and adaptability are important aspects of the program.

Follow-up

☐ We now enter the final phase of low vision services—follow-up. It must be kept in mind that the aids the student finds most beneficial by the end of the training program may be quite different from those recommended at the initial low vision evaluation. The teachers, the parents, other involved personnel, and the student himself can all provide helpful information and observations on the efficacy of the aids for that particular individual. If at any time the student, after much effort, rejects the aid for any reason (e.g., cosmetic, reading distance too close, images unclear, etc.), an immediate phone call to the low vision educational consultant is in order. Many times a change in the type, magnification, or size of the aid, made before the student develops a feeling of hopelessness, will make the difference between success and failure in the use of an aid. If the consultant is unable to solve the problem, he will call the low vision clinic for advice and direction. This arrangement eliminates an unnecessary and often costly visit to the low vision clinic and also assures that the student receives immediate attention to his need for a different aid or training approach. Once again, a thorough visual screening should be conducted with the student using the present aid so that as much information as possible can be provided to the examining clinician at the time of the phone call. In some cases the situation may necessitate a return visit to the clinic. Again, the establishment of a local low vision aid repository is an asset in these situations, as other low vision aids are readily available to the teacher for use according to instructions from the low vision educational consultant or the low vision clinic.

Contact with the clinic

Continuing re-assessment

A periodic follow-up report on how the student functions with the aid will help assess progress and provide information for retraining in certain problem areas. Again, pertinent information should be gathered from all involved personnel. A follow-up screening should be done on a routine basis to check on changing eye conditions and to insure that the student is using the aid that is best for him. It is recommended that the teacher use charts different from those used by the low vision clinic, as this will help eliminate the possibility of familiarization and memorization of the charts which might interfere with future low vision clinic evaluations. For the same reason, checks on the student's acuity should be kept to a minimum—approximately once each year. Progress reports should be forwarded to the low vision clinic on a regular basis.

Training in Low Vision Services

☐ At this point the overwhelming question is how does a teacher develop the skills to provide a thorough low vision service. There are several possible approaches: gaining a background as an optometric technician or an ophthalmological assistant through an accredited school, spending in-service training time at a low vision clinic, gaining experience as an employee of a low vision clinic, or obtaining knowledge through university teacher-preparation programs. The latter seems to hold the most potential. If universities will provide several in-depth classes concerned with various facets of low vision services (e.g., screening, aids and their use, psychological aspects of low vision functioning, the physics of light, distance training with and without aids, near point training with and without aids, the low vision team approach, and internship work in a low vision clinic), all future teachers graduating as certified instructors of the visually impaired would truly be prepared to work with the ever-increasing segment of their caseloads who have useful residual vision. (For further clarification of the need for and direction of formal training programs for professionals in low vision care, see Rosenbloom and Jose, 1975.) This approach will require close cooperation with low vision clinics throughout the entire country so that more defined lines of responsibility and quality instruction can be established. Such programs should emphasize actual useable knowledge and experience rather than the philosophical or overview aspects of low vision services. With quality instruction, graduating teachers should be able to work closely with low vision clinic personnel, do basic low vision screenings as described above, evaluate visual functioning, recognize suitable aids for a variety of student needs, effectively teach the use of those aids, develop and carry out thorough individualized low vision aid training programs, recognize ineffective low vision aids and seek other more appropriate aids during the training process, work closely with parents and school personnel in proper aid usage, and provide quality follow-up service.

Cooperation of clinics

While the above approach will be helpful in providing future staff with adequate training, it does not provide presently employed teachers with an opportunity to obtain this knowledge easily. Administrators should implement procedures that encourage their staff to enroll in such university courses. It will easily help the agency financially as well as allow it to provide better service. In New Hampshire, shorter low vision examinations and follow-up done by teachers rather than the low vision clinic has cut the cost of providing comprehensive low vision services to the children of the state by more than 50 percent. Future savings are foreseen through the gradual elimination of unneeded large print books.

Training agency staff

With approximately 80 percent of our visually impaired population having residual vision, it stands to reason that we as teachers should be able to teach the use of low vision aids and residual vision as well as braille and other related subjects.

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(Continued on page 265.)

The Sight of Blindness and the Phenomenon of Avoidance

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ABSTRACT: Newly blinded people, in addition to adjusting to their loss of vision, must also often cope with being avoided by family and friends. All blind persons encounter the problem of avoidance in their daily contact with people. Because of the sighted person's fear of becoming blind himself, he avoids anything that stimulates that anxiety, particularly individuals who are blind. Being unable to cope with the fear aroused in him, he retreats in order to reduce its intensity. Avoidance can be countered by more personal contact between blind and sighted persons and by increasing the visibility of well-adjusted blind persons in the community. Agencies for the blind can, in their public education and fund-raising programs, influence attitudes by accurately portraying the abilities of blind persons.

Being Avoided

"When I lost my sight, my friends left me like fleas from a dying dog." This statement was made by an elderly woman who has survived much tragedy. She had outlived her husband and six children. But the final blow came when she lost most of her sight. Her friends began avoiding her—family and social activities required all their attention. It was obvious to this woman that the sudden absence of some of her friends and the gradual withdrawal of others was directly related to her loss of sight.

Unfortunately, this experience is not uncommon to people who lose their sight. Often, such a person finds that just when he needs the support of friends, they are unavailable. The blind person hesitates to call because he would feel degraded if he seemed to be begging for help from friends or acquaintances. He does not know why his friends avoid him, but they do. Often such a person concludes that either he has done something to offend them, or that he is no longer acceptable to them because of his condition.

The blind traveler

Similarly, blind travelers occasionally experience the "avoidance phenomenon." While traveling they step onto a bus and search for an empty seat with their cane. With it they touch the feet and legs of sighted passengers who sit in frozen silence even though there is an empty seat next to them. Or, while walking, they become briefly disoriented on a busy street. They hear people hurry past even though they try to speak to them to get information.

A more painful problem is that of the person who is avoided or rejected by family members when he loses his sight. The husband or wife is too busy to give the help the visually impaired person needs until he has acquired the skills necessary for relatively independent functioning. He finds himself more and more alone. Eventually the mate finds someone who is more compatible —and sighted—and the marriage is dissolved.

Avoidance by professionals

Another comparable situation is that of the professional who is unable to cope with the fact of blindness. Recently, a mobility instructor and I spoke to the staff of a community mental health center on "The Crisis of Blindness."

After the meeting a staff member told us that he was surprised at how few people attended even though they had a large staff. He added, "Maybe the subject bothers them." At another meeting a psychiatrist told us that in his opinion many psychotherapists would not work with a blind patient.

Not a universal phenomenon

Certainly, the tendency to avoid persons who are blind or losing their sight is not universal. Many blind persons speak of the support they get from friends. Others say acquaintances may leave but that they quickly find out who are their real friends. The blind traveler can usually get help when he needs it—sometimes more than he wants. All marriages do not break up when one of the partners loses his/her sight. And probably most psychotherapists are quite willing and able to work with blind patients. However, the problem of avoidance does exist. And when a blind person experiences it, he finds that it adds to the difficulty of adapting to life with little or no sight.

The Role of Anxiety

☐ One possible explanation for this "avoidance phenomenon" is the anxiety felt by the sighted person who sees a blind person or comes in close contact with him as a friend or family member. Most of us experience anxiety at one time or another. Some of us deal with it directly. We face it and come to grips with it; the threatening situation does not prevent us from doing what we want to do or have to do. For example, some people do not like to fly. They have heard of bad air crashes and the idea that it could happen to them stimulates considerable anxiety. Most of them fly anyway. But others who experience the same anxiety never go near a plane; they drive or take a train. Many sighted people experience anxiety at the thought that they could lose their sight. A Gallup poll in 1965 demonstrated that a majority of the sample polled feared blindness second only to cancer.

Fear of blindness

Why should the thought of blindness be so frightening to so many people? For most people sight is an essential means of dealing with a harsh or threatening environment. It is a tool for survival. With it the sighted person feels more competent to anticipate danger and cope with it. He feels, in addition, that his sight is his best means of controlling the environment. Without it he feels he would be totally helpless and unable to function. For the person who feels that his sight is indispensable, the thought of losing it is frightening. However, he does not usually experience such thoughts on a conscious level. Nevertheless, they are at least subliminally present. The mention of blindness or the sight of a blind person stirs in him whatever anxiety he feels at that thought that he could lose his sight. In a very real sense the blind person becomes a stimulus for anxiety. When the sighted person sees a blind person he is brought face to face with the fact of blindness and the possibility that this could happen to him.

An aversive stimulus

In terms of learning reinforcement theory, the sight of a blind person becomes an aversive stimulus. In other words, it is an unpleasant, disagreeable, or painful stimulus. Thus, the sight of the blind person arouses the unpleasant sensation of anxiety. Approaching a blind person is negatively reinforced because the unpleasant sensation of anxiety intensifies. Walking away from or avoiding a blind person reduces the anxiety and the sighted person is reinforced for the avoidance behavior.

Coping With the Anxiety

The spouse

☐ The friends of the elderly blind woman could not cope with the feelings aroused whenever they came in contact with her. She was a reminder that they too could lose their sight. They were more able to live with the excuses they made for not visiting her than they were with the feelings they experienced in her presence. The reaction may be even more marked when the person fearing the loss of sight is the husband or wife of a person losing his sight. During the period immediately following the loss of sight, the visually impaired person may, in fact, be quite helpless. The mate is convinced that blindness means total helplessness and may wrongly assume that that stage is a permanent state. Each day he is reminded of the thing he fears. When he can no longer live with the increasing anxiety he may seek out a relationship with a sighted person. In this relationship his anxiety is reduced and eventually he escapes entirely from the presence of his blind mate.

The therapist

A psychotherapist who fears the loss of his sight might find himself in a similarly untenable position if he attempts to work with a blind patient. If the person is in the process of losing his sight, the therapist might have to listen to the patient agonizing over what he has lost and how difficult the adjustment process is. But even without this specific situation, the therapist might simply not be able to deal with the presence of the blind person.

The stranger

The stranger who passes a blind person on the street will probably not experience such intense anxiety, but what he feels is nevertheless real. If he fears blindness, it is a simple matter to remove himself from the presence of the blind person. He can "avoid" easily. He does not experience the conflict between staying and leaving which may be stimulated by the closeness of a marital relationship and he does not feel the conflict of a psychotherapist who fears blindness, while also feeling an obligation to a person who needs help. However, the result is the same. Avoidance is the solution because it reduces anxiety.

And the blind person who experiences such avoidance must learn to live with it. Either he is left to his own devices or he must get whatever help and support he needs from those who do not fear blindness or those who fear it but are better able to cope with the anxiety.

Counteracting the Fear

☐ Since avoidance of blind persons is often based on anxiety over the possible loss of sight, something might be done to counteract this fear. In many cases, fear is based on ignorance of the true facts. Certainly where blindness is concerned, most people are ignorant of the true meaning of the condition and what blind or visually impaired persons can do without sight. This is usually what the fear of blindness is all about. But it is a situation that can be remedied.

Personal contact

One approach to such a solution is the personal contact between a well-functioning blind person and a sighted person. One case that came to my attention is that of a sighted woman who, through mutual friends, became acquainted with a blind person. She had always been afraid of losing her sight. But gradually, through this contact, she became aware of how much a person could do without sight. Eventually she lost her fear of blindness. Without this contact with the blind person and the subsequent opportunity to gain a more realistic picture of blindness, she would probably always have avoided blind people.

Visibility of well-adjusted blind persons

Undoubtedly there have always been many capable blind persons, but they have not always been highly visible to the larger community. They functioned well in their own home but, because they did not have access to good mobility training, their competence was not known to many sighted people. Certainly, some of them were good travelers, but mobility was not a skill generally acquired by most blind individuals. The visually impaired person learned to travel by trial and error or through help from another blind person who might or might not be a good traveler.

In our generation, this situation has changed. Professional mobility training is available to many individuals. Special training in other skills and information concerning special devices are also more generally available.

This combination of training in home skills and travel skills makes it possible for more blind persons not only to function well at home but to demonstrate their ability to sighted members of the community. Their ability becomes evident to family and friends and, as they travel, it also becomes apparent to strangers who observe them. As these visually impaired persons show what they can do, erroneous beliefs concerning the total helplessness of a blind person will be changed.

Period of Adjustment

☐ Of course, the most critical phase that leads to negative beliefs and attitudes concerning blindness is the period immediately following any drastic loss of sight. The blind person often gives the impression of being helpless and disturbed by his loss at such a time. He will give this impression until he has acquired compensatory skills. Any sighted person who observes a visually impaired person during such a period might form negative attitudes concerning blindness by assuming this to be a permanent condition of visual loss. But when a visually impaired person has acquired the necessary skills and has gained a measure of competence, he has an opportunity to change these negative beliefs. If, emotionally and physically, he has learned to live with the loss of his sight, he can contact friends and acquaintances who have avoided him. When he has become comfortable with his condition, he can help his friends to become comfortable with it. As their beliefs about blindness change, they have an opportunity to overcome their fear of blindness.

The Role of Agencies

☐ Another approach to the solution of avoidance concerns the role of agencies serving blind persons. Through their public relations efforts, these agencies can and should have considerable influence on community attitudes toward blindness. Their public relations work should not be directed solely toward the goal of raising funds. Fund raising is necessary if they are to provide services for blind clients, but the mechanics of fund raising can be coincidentally used as a vehicle for correcting erroneous beliefs about blindness and what blind people can do.

Public education

The literature of these agencies should therefore emphasize, without distortion, the abilities of blind persons. Radio and television spots can serve a similar function. Repeatedly and in various ways the sighted community will get the message that with proper training a blind or visually impaired person can learn to live and function with little or no sight.

This approach need not hamper fund-raising efforts. The potential contributor would, instead, have a healthier basis for making his contribution. He will not give because he feels guilty or because he pities the blind. He will contribute because this is the agency that helps blind people achieve relative independence through appropriate training. In this way, fund raising would still benefit the agency and therefore its clients. But it would have, in addition, the longer-term goal of changing inappropriate beliefs and attitudes concerning all blind persons.

A slow process

Blind individuals who demonstrate their abilities and agencies which disseminate useful and correct information about blindness will be working in concert. The implicit goal in each case is to change attitudes that contribute to anxiety over the possible loss of sight. It is not a goal that can be achieved quickly, but it is a goal worth working toward. The person who has his sight need not fear its loss. And the person who loses his sight need not and should not have to lose friends or family simply because they do not wish to be reminded that they too can lose their sight.

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Training Prospective Teachers of Multiply Handicapped Blind Children

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ABSTRACT: The proposed program for the training of teachers of multiply handicapped blind children at Florida State University involves the development of their competency in classroom and home teaching, administering and supervising, and consulting and advocating. The program includes core coursework in visual disabilities, allied and/or generic coursework, core coursework in multiple disabilities, other special education coursework, and practica. Underlying the program is the belief that to work effectively with abnormal behavior requires a solid understanding of the growth and development of nonhandicapped children.

Over the years, a number of special educators have called for the establishment of quality educational programs for multiply handicapped blind children (Dunn, 1973; Graham, 1968; Cruickshank, 1953). Yet, despite the urgency of this request, relatively few programs exist (especially in the more rural areas of this country). Of those that do exist, too many of them are staffed by ill-prepared personnel (Hatlen, 1973). Unfortunately, the magnitude of this problem is obscured by the lack of comprehensive demographic data.

Increasing Interest in the Multiply Handicapped

☐ There is a growing feeling among some special educators that if we examine those aspects of growth and development common to *all* children, i.e., communciation skills, perceptual-motor development, socialization skills, etc., we will find that a significant number of "normal" blind children are indeed multiply impaired. This, together with recent medical advances and a growing change in philosophy on the part of many professionals that multiply handicapped children are in fact educable, has led to a rapid increase in the number of multiply handicapped children requiring individualized special education programs. Furthermore, the growth of mandatory special education legislation will undoubtedly result in sizeable increases in enrollment in the near future. The need to train master teachers has become a crucial issue today, and federal support has played a major role in this movement.

Florida State University training program

At Florida State University, we are now developing a five-year program to train prospective teachers of multiply handicapped blind, school-age children. The development of this program was made possible through a training grant from the U.S. Bureau of Education for the Handicapped. Begun as a special project, it will ultimately be funded as a part of our total program in visual disabilities. The following teacher training model represents this writer's conceptualizations in an area of critical need.

Proposed Model

☐ Basically, in the proposed model master teachers are viewed as functioning in three competency cluster areas: 1) classroom and home teaching, 2) administering and supervising, and 3) consulting and advocating (see Figure 1). The roles thus established may appear to be distinct, but in reality there is much over-lap. At the outset, role synthesis is essential for setting goals, program

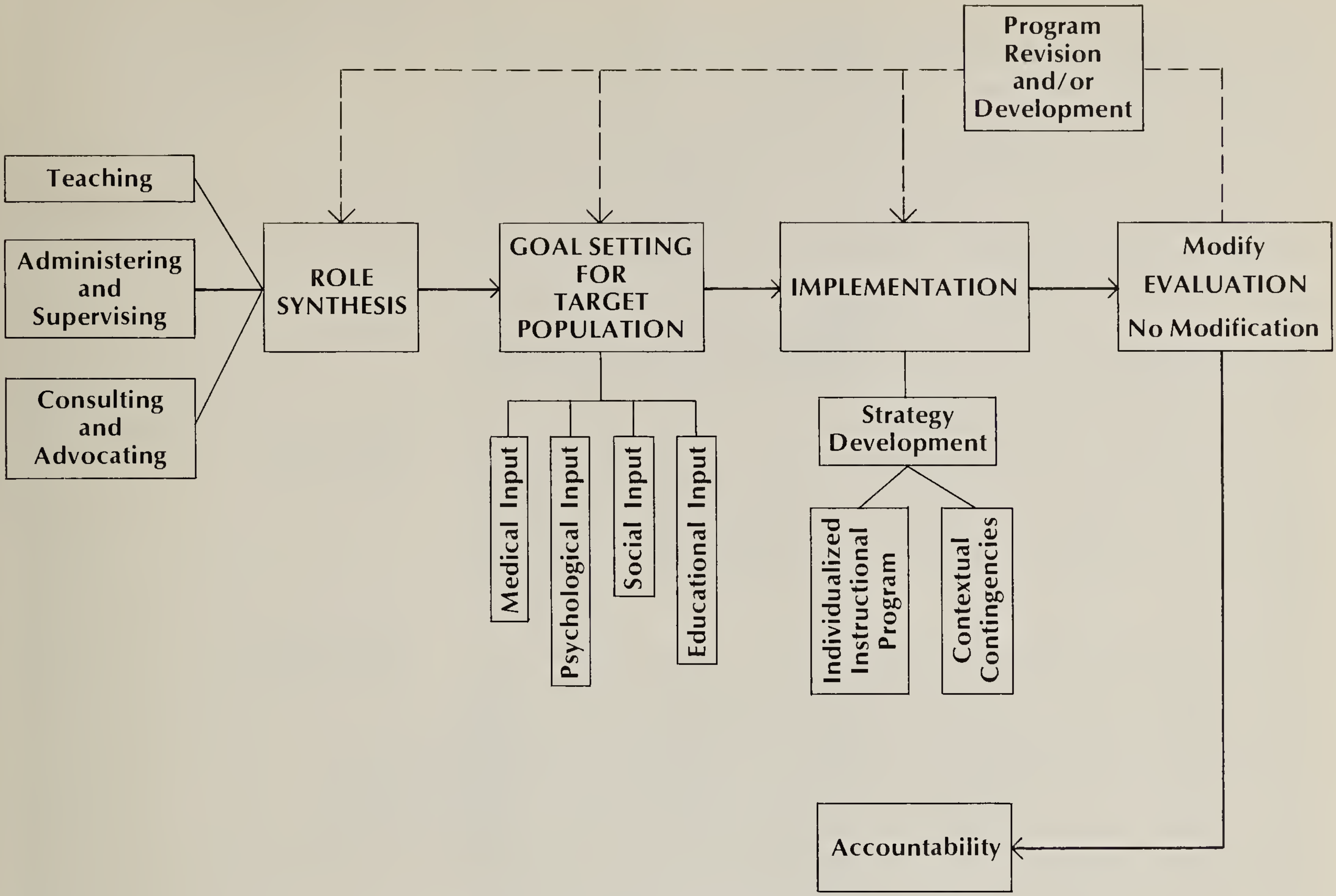

FIGURE 1
Teacher Competencies and Problem Solving in Education

implementation, and evaluation. It is important to emphasize that the prospective master teacher must broaden his/her areas of competency above and beyond those needed for classroom teaching. Such preparation will involve in-depth knowledge and skills *outside* of the blindness system. Teachers of multiply handicapped children have long identified this as a serious inadequacy of their own teacher-preparation programs (Graham, 1968).

Formulating objectives

Once these roles are synthesized, it is then the job of the teacher to formulate objectives for a given pupil on the basis of medical, psychological, social, and, especially, educational inputs. Next, implementation of the goal-setting format is achieved via strategy development. Specific strategies are determined by an individualized instructional program, taking into account appropriate contextual contingencies.

Evaluation

At some point at or near the end of the implementation stage, an evaluation component is introduced by the teacher to justify continuation or to indicate the need for modification of the detailed plan. If evaluation indicates modification and further planning, then such change(s) may occur at either the implementation, goal-setting, or role-synthesis stages. Otherwise, the master teacher stands accountable for what he has formulated and carried out following completion of the task by the student.

Teacher Competencies

☐ The general competencies deemed necessary for future teachers are teaching, classroom management/organization, administration/supervision, and consultation/advocacy (see Figure 2). The initial phase (teaching role) requires the ability to observe, assess, and evaluate the entry-level behavior of students and learning traits. This preliminary but crucial information is then matched to an appropriate intervention procedure. Such an approach is similar to the clinical teacher model advocated in other areas of special education as well as in regular education (Schwartz, 1971; Wolf & Anderson, 1969). At or near the completion of the intervention procedure(s), an evaluative measure is applied to justify either continuation or modification of the techniques used during this stage. Program revision and/or development may or may not be thus indicated. Ultimately, an accountability component will be maintained when evaluation indicates no further modification.

Accountability

If accountability is to be more than just an empty catchword of educational jargon, it must denote a responsibility that teachers must accept for what they do with children. This in turn implies that teachers be evaluated on the criteria that *they* specify at the outset of the academic year, and not on the expectations of administrators which have never been clearly communicated to the teachers.

Paraprofessionals

☐ A key part of this model focuses on the use of paraprofessionals. The training of master teachers is the main goal of the program. However, it should be emphasized that the probability of producing sufficient numbers of qualified teachers to meet the current and future needs of multiply handicapped blind children is rather low. Therefore, in order to retain as low a teacher-student ratio as possible and still maintain quality instruction, the use of paraprofessionals probably represents one of the most feasible solutions to the problem. The training of teacher aides at the community college level may also help ease this manpower shortage. Development of foster grandparent programs, as well as direct parental involvement, should also be considered.

Selection and training

Master teachers must be able to isolate and identify those factors necessary for the appropriate selection and training of paraprofessionals. Whenever possible, teachers should play an active role in both the selection *and* training processes. The skills of personnel management (interpersonal communications, separation of powers, delegation of authority, etc.) must be learned in the teacher training program. The evaluation, program revision, and accountability components at this level are worked in just as they are at the teaching level. Competencies in educational administration and supervision are vital, since many graduates will be initiating programs of their own. In this design, skills in classroom organization and management are located between the teaching and administrative levels, since similar competencies are needed for both roles. The third and final role deals with developing consulting and child advocacy skills, encompassing such areas as program information dissemination, pupil identification, and equal educational opportunity.

The Teacher and the Community

☐ In order to disseminate information about their program, prospective teachers must be skilled in dealing with families in the home, community action

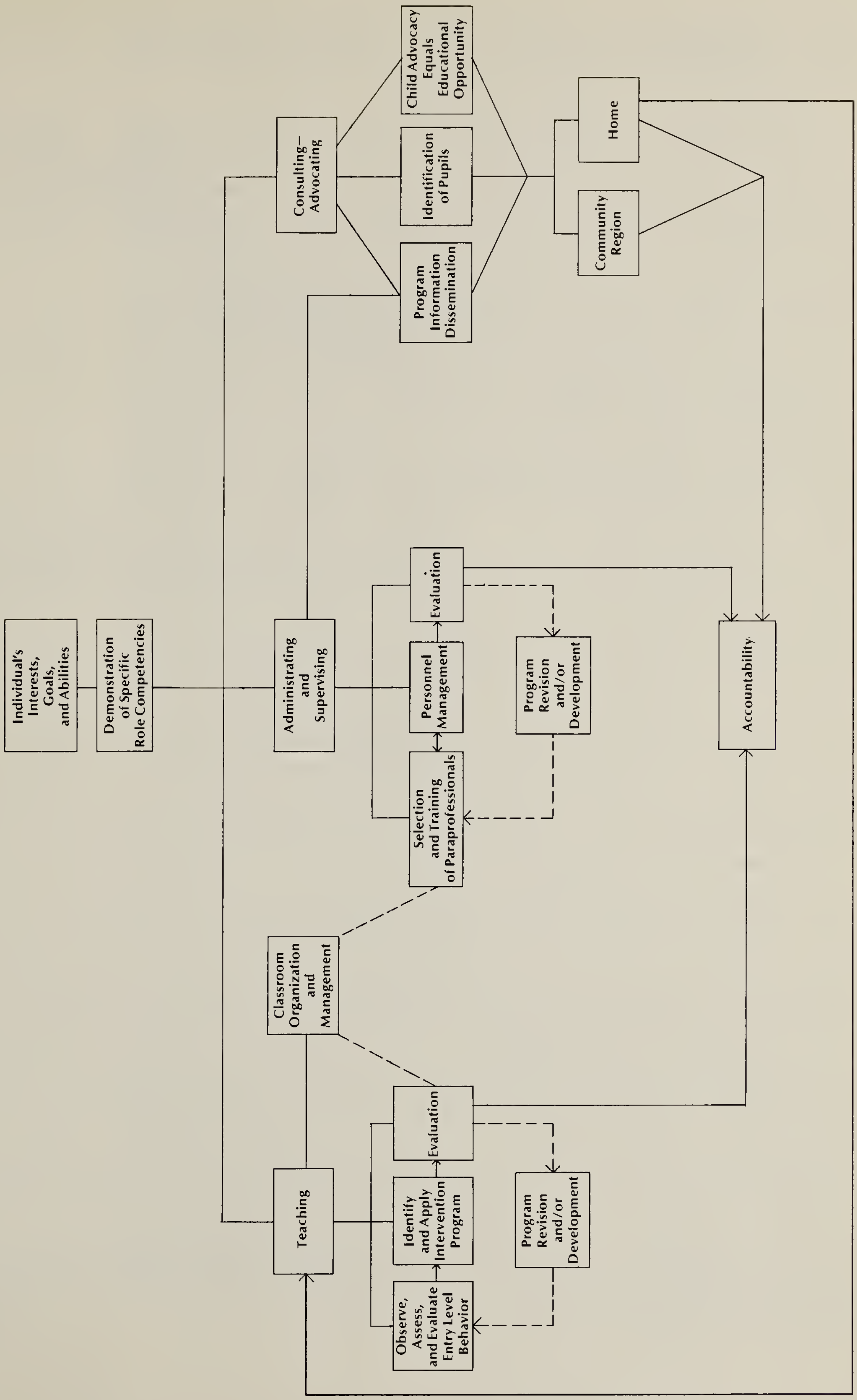
Individual's Interests, Goals, and Abilities
Demonstration of Specific Role Competencies
Administrating and Supervising
Personnel Management
Evaluation
Selection and Training of Paraprofessionals
Program Revision and/or Development
Accountability
Consulting–Advocating
Child Advocacy Equals Educational Opportunity
Identification of Pupils
Program Information Dissemination
Home
Community Region
Classroom Organization and Management
Teaching
Observe, Assess, and Evaluate Entry Level Behavior
Identify and Apply Intervention Program
Evaluation
Program Revision and/or Development

FIGURE 2
Master Teacher Preparation

groups (civic and political groups, social welfare agencies, etc.), and regional agencies. Probably one of the more glaring weaknesses of many teacher training programs is the lack of emphasis on community and regional resources and how to make them more readily accessible to teachers.

Identifying children needing services

It is also important that teachers develop the necessary strategies for seeking out and identifying pupils for program placement. This is especially true in the more rural areas. Establishing alliances and keeping lines of communication open with other professionals, such as local ophthalmologists, social workers, school administrators, etc., will insure that as many multiply handicapped children as possible receive services, for these people also have a vested interest in exceptional children. Rather than fragmenting aid, a unified multidisciplinary approach may indeed improve the quality and quantity of available services.

Catalytic role

Finally, the master teacher also functions to help children receive educational services geared to their capabilities, for *all* children can benefit from an education (Gilhool, 1973). Whether this is done by drafting new special education legislation or by implementing existing laws, the teacher should play a catalytic role in legislative lobbying and the organization of politically active parent groups. It is especially in the legislative area where teachers can have an immediate and significant impact.

Coursework Areas

☐ The specific coursework necessary for the development of teaching, supervising, and consulting skills include *core coursework in visual disabilities* (social, psychological, and emotional impact of blindness; methods and materials; communication skills; orientation and mobility for the classroom teacher; assessment of the visually handicapped; implications of low vision; structure and function of the visual mechanism; and graduate seminars in vision), *other special education coursework* (survey of special education; educational assessment of "normal" and exceptional children; mental retardation; the emotionally disturbed and socially maladjusted child; a four-course sequence of oral language development, survey of speech problems, basic audiology, and manual communication with the deaf; and physical education and recreation with the handicapped—motor development), *allied and/or generic coursework* (for example, behavior modification; legal aspects of education; parents as teachers; social work with individuals and families; developmental and/or social psychology; body language and nonverbal communication; child growth and development—preschool and school age; interpersonal communications; rehabilitation counseling; administration; and supervision), *core coursework in multiple disabilities* (the blind child with additional disabilities—introduction, educational management, and prescriptive teaching; seminars in multiple disabilities—informal assessment, the physically handicapped, program development), and *practica* consisting of one full quarter of classroom teaching in the senior year and one full quarter of classroom teaching or administrative internship in the graduate year, including experiences with the resource room, itinerant programs, residential facilities, day-care centers, and camps through visits, field trips, etc., so that there is contact with multiply handicapped children each and every quarter in the program (see Figure 3). The rationale for this selection is:

Multiple disabilities

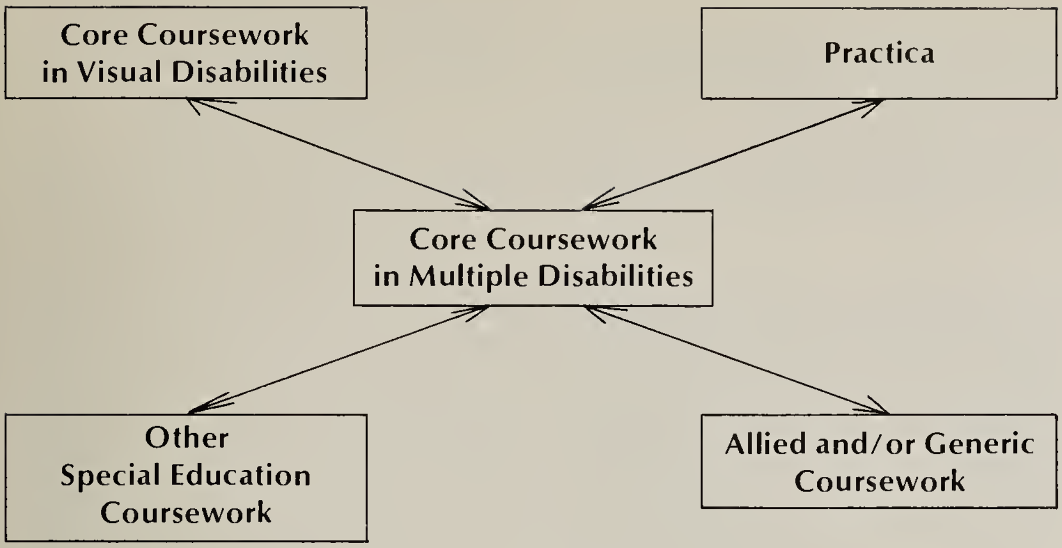
Core Coursework in Visual Disabilities
Practica
Core Coursework in Multiple Disabilities
Other Special Education Coursework
Allied and/or Generic Coursework

FIGURE 3
Coursework and Practica in Master Teacher Education

Rationale

☐ 1. In order to comprehend and fully appreciate abnormal behavior, one must have a thorough background in the growth and development of nonhandicapped children; hence, there is a strong emphasis on formal and informal testing, developmental milestones, early childhood education, parental involvement, and behavioral management.

2. While the medical model and similar categorical approaches in special education have some value in labeling exceptional children, they do little in the way of describing educational problems and they do not help in the remediation of these difficulties. Such a model (or models) should be supplemented with a more generic approach that deals with the development of knowledge and skills fundamental to the learning styles of *all* children. Thus, appropriate behaviors involving socialization, cognition, motor development, etc., should form the terminal objectives of an intervention program.

Philosophy of service

Rather than resurrect the generally obscuring controversy between categorical and non-categorical approaches in special education, the key point to reiterate is that the visually handicapped do need special methods of instruction, special equipment, and specially trained teachers under certain conditions, but these unique needs must not be emphasized to the exclusion of the similarities that these children display *to all other children, handicapped or not.*

Interactions between disabilities

3. When blindness is complicated by an additional disability, the educational problems encountered are not necessarily additive, but probably multiplicative, if not exponential, in nature. Therefore, emphasis should be placed on the *interactions* between disabilities rather than on their summation. Intervention programs are similarly affected, so that remedial techniques and specialized equipment developed for the "normal" blind child may have little application or relevance for the multiply handicapped child. Educational research dealing with new approaches and techniques represents an area of critical need. It is essential that prospective teachers know how to conduct and evaluate educational research.

Eclecticism

4. Knowledge of the blindness system alone will not prepare teachers adequately to deal with multiply handicapped blind children. Understanding the implications of other handicapping conditions and how to deal with them is vital for planning and executing quality educational programs. A teacher training program should reflect this philosophy by being both flexible and highly eclectic. Students should select courses both from within the special education program and from allied areas.

5. If in fact it is the role of the school to educate the multiply handicapped child, then he must be seen in a much broader context than just a pupil in a classroom. He must be seen as a family member, a potential job holder, a contributing member of society—*a person with the opportunity to be all that he can.* If G. H. Mead is correct—that what we are, or perceive ourselves to be, is largely determined by the significant others around us—then we must study in much greater depth the influences that parents, peers, and siblings have on the development of the handicapped child. Counseling techniques, principles of social work, and skills of interpersonal communication are but a few of the vital tools needed by the master teacher.

Practica

☐ Practicum experiences form the crux of this program and are initiated at its outset. Students receive direct contact with multiply impaired blind children each and every quarter they are with us. While a variety of settings exist, the nature of the experiences is largely determined by the student's interests and goals. In addition, students work with parents of preschool visually handicapped children twice a year in a camp-conference setting. We have found this to be an extremely worthwhile experience for both the children and their parents, as well as for our students. For those with no prior experience with normal children, assignments in local day-care centers are required.

Day-school and itinerant programs

Experiences with multiply handicapped children in day-school programs and state institutions are available throughout the junior year. Since we are a regional vision program in a relatively sparsely populated area, some of our practicum experiences are geared toward the unique problems faced by itinerant teachers in more rural areas.

During their senior year, students spend one full quarter as associate teachers in either resource, itinerant, or residential school positions. In the graduate year of the program, one full quarter is spent either in one of the above three capacities or in an administrative internship. A number of visits and field trips to local and regional programs are made during the three-year program.

Summary

☐ In conclusion, it appears that in preparing a teacher training program for multiply handicapped blind children, some recurring issues emerge. First, we must redefine what we mean by "education." It seems to many of us that this word means much more than reading, writing, and arithmetic—it calls for the preparation of children *for life.* If this means simply dressing and feeding oneself or working in a sheltered workshop, so be it. But developing such skills for independent living and for a vocation have as much legitimacy in the school curriculum as social studies and plane geometry. Recent court cases have borne this out all too well. If we see education in this light, perhaps we can more easily justify the feeling that *all* children can benefit from an "education."

Wide range of abilities

Second, just as there are wide ranges of ability among normal children, so too are there wide ranges of ability among the multiply handicapped. The term "multiply handicapped" is not necessarily synonymous with profound learning impairment. Given more appropriate intervention programs in the hands of well-trained personnel, many multiply handicapped children can function at impressively high levels.

More research is needed

Finally, it is apparent to this writer that there exist few educational techniques for remediating some of the problems that these children face. Even with the modification and adaptation of existing remedial techniques, we are still faced with the same basic problem at approximately the same level of need. Perhaps with the increased training of new personnel and the stimulation of more people to enter the field, more intensive educational research will become manifest to deal with this problem. With increased and continued federal and state support this could become a reality in the near future.

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A Reminder

Readers are reminded that the *New Outlook for the Blind* is not published during the months of July and August. Publication will be resumed with the September 1975 issue.

Letters to the Editor

To the Editors:

A problem that seems to receive little mention is the plight of the multiply handicapped blind child in attempting to grasp the fundamentals of reading grade 2 braille. In the January 1975 issue of *New Outlook for the Blind*, p. 39, A. James Nezol brought this problem to light in his comment, "Reading and the Multiply Handicapped Blind Child." Mr. Nezol suggested that grade 1½ braille, in which contractions are kept to a minimum of 44, or some other alternative should be available for this population which is increasing in numbers. He goes on to mention that since grade 1½ braille has already been developed, it could be the alternative for this population rather than developing a new alternative system.

As a teacher of multiply handicapped blind children, frequently I encounter the frustration and disappointment which these children experience in trying to effectively deal with grade 2 braille. I often hear the question, "When can I read a real book?" Such children are denied the opportunity to read even the most basic preprimer due to the use of grade 2 braille in published materials for the blind. This population derives a genuine pleasure from reading regardless of how limited their skills. Reading is an activity which they are able to do without assistance and receive instant feedback, provided that they can decode the symbols. Grade 2 braille, with its heavy use of contracted forms, inhibits this independence. Rather than providing the individual with meaningful feedback, it provides frustration. With grade 2 braille, if a crucial contraction is forgotten or confused with another, how does one phonetically sound out the contraction to gain some meaning from it? Context clues are not always the answer for such children due to the fact that they are multiply handicapped.

Talking books, cassettes, and other auditory devices do not provide the necessary alternative for such children's reading problems. These devices certainly serve a very important function for these children, but do not solve the problem they face with grade 2 braille. If we solely rely on various types of auditory stimuli, we are overlooking a basic tenet in dealing with any type of learning disabled individual (into which category the multiply handicapped fall) regardless of whether or not he or she is visually handicapped. Bombarding one sensory modality will not make up for deficiencies in others. Through the use of all remaining modalities (in this case the auditory, tactile, and kinesthetic), hopefully an individual will be able to derive some meaning from stimuli presented to him and in this manner learn. If there is a deficiency in one of the remaining modalities, by incorporating all of the remaining modalities, the deficiency may be successfully accommodated. Some intermediate form of grade 2 braille, such as grade 1½ braille would provide multiply handicapped blind children with tactile and kinesthetic feedback. Auditory stimuli also could be incorporated in learning to read and thus make it easier for them to grasp the basic fundamentals.

Such a population should have appropriate reading matter available for their use. If services for the blind are to truly serve the blind, this significant segment of the blind population should not be ignored.

Theresa A. Kopalek
New York Institute for the
Education of the Blind
Bronx, New York

To the Editors:

We are thoroughly crushed that Leslie L. Clark, in his article "Research Resource Needs in the Future" (*New Outlook*, February 1975), totally disregards our efforts at Science for the Blind Products over the past ten years. One of the reasons why the blind community is unaware of the help available to technicians is because our work is often overlooked by experts writing about the field. In a way we are a "basement" operation, in that we are a small, struggling company, making every effort to keep prices down, and serving a very small group of blind persons who need a very specialized type of help. However, if the experts would acknowledge our existence and help us to spread the word concerning the instruments which we make available, we could expand a little and become a more significant force in the market place.

Our products are well established and some of them are in high demand. We do not rank as a "basement" operation in the sense of giving up and going out of business easily. We've been around for a long time and we expect to have a long and busy future—provided people stop ignoring us and begin to give us the recognition we have earned as an organization which specializes in the needs of technical and scientific personnel and will work to help the individual with specific problems.

Meter readers, recording level indicators, ignition analyzers, special range thermometers, audicators, impedance bridges, digital clocks, multimeters, and other devices from Science for the Blind Products are all standard instruments on our "assembly line" and are currently in use in the United States and overseas by scientists and technicians. We are constantly seeking new instruments to expand our offerings and our operation. If you could help us to publicize our activities instead of ignoring us, we could stabilize our future and help far more people.

Lee Benham
Science for the Blind Products
Bala-Cynwyd, Pennsylvania

Editorial Notes

Wither Braille?
Why Braille?

When I began thinking about writing this editorial commemorating the 150th anniversary of the "invention" of braille, it seemed fitting to discuss braille's future rather than its past. What better compliment, after all, to the past of something than to celebrate its future, its aliveness?

In my mind's eye, the editorial was called "Whither Braille?" and would deal, optimistically, with what Mann calls the "enhancement of the availability of braille." Following on a long period during which braille was very much on the "back burner" as a subject of interest to practitioners and researchers, the last few years have seen a number of exciting and promising developments in the use and production of braille.

Some of these developments grew out of modern technology. The Argonne Braille Machine will make it possible to convert symbols on ordinary magnetic tape into raised braille dots on a plastic belt that moves past the fingertips of the reader. The MIT BRAILLEMBOSS and the Tri-Formation LED-120 braille computer terminals can be used in a number of ways: with the addition of a Teletype, as a newswire, for direct access to computer-stored material, as a time-shared terminal for blind computer professionals; given a compatible computer-assisted method of typesetting for inkprint materials, near-simultaneous typesetting and printing of a braille edition.

Not all of the recent developments are technological. Considerable work is being done in the area of speed reading of braille and a number of blind persons have already participated in training programs. The use of Grade 1½ braille seems to be an effective means of teaching multiply handicapped blind children to read. The development of beginning braille reading materials that take into account problems such as the frequency of difficult contractions is receiving attention.

Before I even sat down at the typewriter to begin writing this piece, my thoughts about it had turned darker. The irony of writing about exciting developments in braille in some quarters while its future was being written off in other quarters could not be ignored. So "Why Braille?" was tagged on to "Whither Braille?"

The "mass market" mentality that thinks first in terms of numbers—and only notices large numbers—seems to be assuming increasing importance in decisions about availability of reading materials for blind persons. More blind people read recorded materials; ergo, attention and funding should be concentrated on increasing the amount of recorded reading materials. And, since neither attention nor funding is limitless or even expanding, the real meaning is that the same-sized pie must be cut in different-sized slices. So braille's slice gets smaller.

On the surface, the reasons given for emphasizing recorded over braille materials sound rational. And they are simple to understand. The number of congenitally blind and early-blinded persons is decreasing and a majority of this group is multiply impaired. The number of persons losing sight late in life is increasing. Diabetes is now the leading cause of blindness both in the aging and young adult populations and the neuropathy that many diabetics develop lessens considerably the sense of touch. Braille is not as "efficient" as the various recorded media. Technology has made recorded materials both more accessible and less expensive than braille materials.

The fallacies behind this reasoning are at once more complex and more subtle. Yes, the congenitally blind population is—thank heavens—getting smaller. But there still are blind children and braille is still the crucial and basic element in their education. Grammar and spelling and syntax and sentence structure cannot be learned from a recording. The blind child cannot learn to write from a recording.

It seems to be pretty well accepted as fact that persons who have lost sight late in life are not interested in learning braille and that blind diabetics cannot learn braille. Is this fact or myth? I have met or known of a number of blind persons in both groups who have learned braille and find it valuable.

Braille is, supposedly, a less "efficient"—not as fast—method of reading than listening is. But speed-reading techniques for braille are a reality. Furthermore speed is not necessarily crucial; for certain kinds of materials it can be detrimental. Many books demand slow and careful reading. The subtle complexity of the novels of Henry James—their heart—would be lost in a fast, "efficient" reading. Nor is braille less efficient than recording when one is consulting a dictionary, studying charts or tables, doing mathematics, sight-reading music, reading a label on a can or door, checking a footnote, parsing a sentence, checking a computer printout.

There is too a powerful, if often intangible, benefit to direct access to the printed page. When one listens to a recording, one is hearing the author's words and ideas and style filtered through at least two other persons' sensibilities and interpretations, the reader's and the person who assigned the reader.

Finally, there is the numbers game both in terms of size of audience and cost. Because the audience for recorded materials is so large, the technology involved has been refined to the point where the per copy production costs are very low. The costs of producing the three editions—print, braille, recorded—of the *New Outlook* are a striking case in point. The per copy cost of the recorded edition is the lowest. The per copy cost of the print edition is in the middle. The per copy cost of the braille edition is three times as high as the print edition and 3¼ times as high as the recorded!

All true, but the technology, albeit not yet so refined, for more automatic and ultimately less expensive and faster production of braille exists. All of the earlier devices listed in this piece conceivably could be used to produce braille from a compositor's tape used to produce inkprint.

It is not Utopian to dream of the day when best-sellers are available in braille almost simultaneously with the print edition or when a large school system that has adopted a new text book can arrange with the publisher—who will typeset the print edition on his own in-house computer typesetting terminal—to have the additional coding needed to produce a braille edition included on the original tape.

It is indeed not Utopian. The *New Outlook* right now is making plans to embark on such an experiment within months—not years.

Cost and numbers are, at any rate, beside the point, aren't they? If they are not, then one would have to ask why inkprint is allowed to exist alongside television and radio since studies show that a majority of sighted persons depend most heavily on the latter two for information, knowledge, and entertainment.

To close, back to Louis Braille's invention of the braille alphabet. From that point, the modern era in the life of blind persons can be dated. Since then, the goal has always been to develop and make accessible a multitude of methods through which blind persons could compensate for sensory deficit. We are at the point where it is becoming possible to provide blind persons with a choice of how to deal with specific problems—mobility, access to information, etc. Whether or not they will be able to choose is up to us.

—M. E. Mu.

From the Field

VISUALLY HANDICAPPED AWARENESS WEEK, DENVER

An extremely successful Visually Handicapped Awareness Week was held last November in the lobby of Denver General Hospital, sponsored by the Denver Department of Health and Hospitals in cooperation with four organizations interested in blind persons.

The experiences of the sponsoring group can serve as a pattern for other groups in other cities, according to Edward R. Murray, regional consultant for the American Foundation for the Blind in Denver. The cooperating sponsors, in addition to the Department of Health and Hospitals and the AFB, were the Colorado Instructional Materials Center for the Visually Handicapped; Colorado Society for the Prevention of Blindness; Denver General Hospital Ophthalmology Clinic; and Colorado State Services for the Blind.

Plans for the week grew out of efforts to establish in-service training programs for the staffs of several hospitals. Then an idea to braille elevators in Denver General Hospital grew, through consultation, into a planning committee for the Awareness Week.

Mrs. Vicki Jackson, public health educator in the Denver Department of Health and Hospitals, outlined the objectives of the week: to educate hospital staff so they know what to do when they see a blind person; to provide a means of distributing educational materials to staff, patients, and visitors; to provide patients who may have "waiting time" with a meaningful education experience; and to stimulate and motivate Health and Hospital Department employees to provide and develop better patient education programs.

To promote the idea of the week in General Hospital, 1500 buttons were distributed to the employees; enclosed with their paychecks, they also received pamphlets about blindness. Other pamphlets were distributed and many staff persons saw the AFB film, "What Do You Do When You See a Blind Person?" Also an exhibit was set up in the hospital

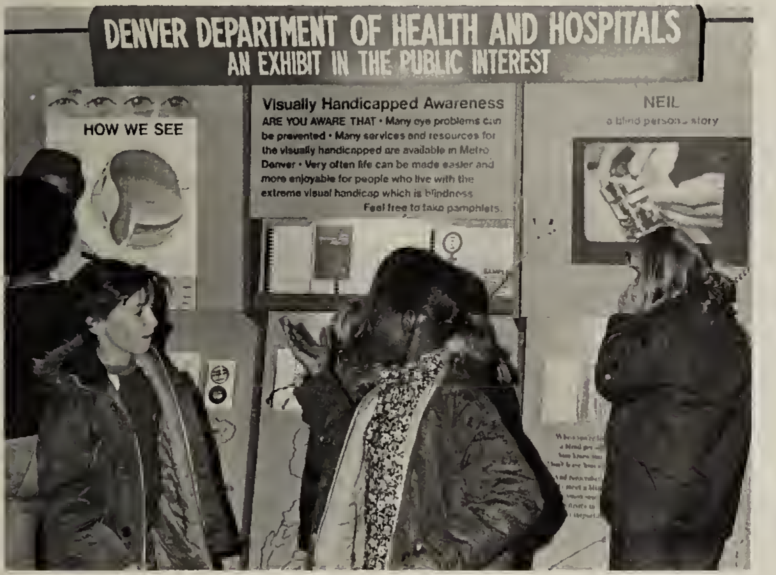
Charles G. Ritter (left), Bryant Moore (center), and Mrs. Sandra Burns (right), manning the Colorado Services for the Blind exhibit, talk with Denver Mayor William H. McNichols and Mrs. Leonard Hurley, former director of Colorado Society for the Prevention of Blindness.

lobby. Exhibiting were each of the sponsoring agencies, as well as the Division for the Blind and Physically Handicapped of the Colorado State Library. Some 1500 persons stopped at the exhibits, including a number of school groups. The Colorado Society for the Prevention of Blindness and the Denver General Eye Clinic provided free vision testing and glaucoma screening.

In her report on the meeting, Mrs. Johnson pointed out that the planning sessions began three months before the Awareness Week and included six sessions of approximately 90 minutes each. After the initial "brainstorming," the sessions consisted of reports on each person's activities. The major tasks included button design and manufacturing, flyer layout and distribution, planning the exhibit, brailling of several general health pamphlets, preparation of slide-sound presentations, and preparation and printing of a pamphlet, "Services and Resources for the Visually Handicapped in Metro Denver."

Publicity included appearances on local television, stories in the Denver newspapers, flyers mailed to all agencies dealing with the visually handicapped, a mayoral proclamation of Visually Handicapped Awareness Week, and contacting school officials.

Future awareness weeks are planned in Denver, but probably will be coordinated with some nationally recognized time, such as White Cane Day, and will include other agencies concerned with visually handicapped persons.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School students listening to recorded information and discussing the exhibit of the Denver Department of Health and Hospitals.

Elementary school students and their teachers discuss blindness after viewing the AFB film, "What Do You Do When You See a Blind Person?"

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Mary Maie Richardson, head librarian.

Your School Includes a Blind Student, by Doris Willoughby, editor, and others. Chatsworth, California: National Federation of the Blind Teachers Division, [1974] 34p. An informational booklet addressed to the regular classroom teacher who has no prior experience with blindness. Educational methods are described for blind youngsters from preschool through the 12th grade. Inkprint copies are available without cost from the National Federation of the Blind, 218 Randolph Hotel, Des Moines, Iowa 50309. Braille copies cost $4.85 and should be ordered from Robert Acosta, 20734C Devonshire Street, Chatsworth, California 91311.

A Guide for Social Competency: Course of Study for the Visually Handicapped, by Mae E. Davidow. Instructional Materials Reference Center for Visually Handicapped Children (American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Kentucky 40206), 1974, iii + 81p. Free. A curriculum design encompassing four age-groups spanning kindergarten through high school. It is divided into four areas: personal appearance;

interpersonal relations; dining skills and table etiquette; and household skills and record keeping.

The Blind Mother, by Helen Kitchen Branson. *American Journal of Nursing* (10 Columbus Circle, New York, New York 10019), Vol. 75, No. 3, March 1975, pp. 414-416. Mrs. Branson is not only an obstetrical nurse and teacher but is also a blind mother. Her article explains to the hospital nurse how various aspects of obstetrical routine can be handled to offer reassurance to the blind or partially sighted prospective mother. She also offers suggestions for teaching the new mother to care for her baby.

Evaluation of a Play Environment for Blind Children, by Robert H. Morris. *Therapeutic Recreation Journal* (National Therapeutic Recreation Society, 1601 North Kent Street, Arlington, Virginia 22209), Vol. 8, No. 4, Fourth Quarter 1974, pp. 151-155. Article based on the author's thesis study as a graduate student in park and recreation administration at California State University in Sacramento. The investigation was aimed at determining the effectiveness of a series of specially designed play courts in helping blind children improve their mobility and orientation skills. The evaluators were professionals in orientation and mobility and teachers of blind and visually handicapped children at both resident and non-resident schools.

Blind, He Leads the Blind, by Richard S. Brooks. *The Rotarian* (Rotary International, 1600 Ridge Avenue, Evanston, Illinois 60201), Vol. 124, No. 5, May 1974, pp. 32-33, 51. The story of Byron Eguiguren, the chairman of the department of Romance languages at the Hadley School for the Blind in Winnetka, Illinois. Mr. Eguiguren, who was born in Ecuador and is very active in achieving educational improvements for the blind in South America, speaks seven languages.

Hadley Story. *Dialogue* (3100 Oak Park Avenue, Berwyn, Illinois 60402), Vol. 13, No. 4, Winter 1974, pp. 61-66. The story of the Hadley School for the Blind in Winnetka, Illinois. The only correspondence school specifically designed for the general educational needs of blind and deaf-blind persons, Hadley School serves over 4,000 visually handicapped persons each year.

A Family the Hard Way, by Janet Bixby. *Dialogue* (see address above), Vol. 13, No. 4, Winter 1974, pp. 2-5. The difficulty experienced by blind persons who wish to adopt children is illustrated by the stories of the James Lees of St. Louis, Missouri, and the Fred Vienis of Wantagh, New York.

Jury Duty in D.C., by Jim Doherty. *The Braille Monitor* (National Federation of the Blind, 2652 Shasta Road, Berkeley, California

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94708), January 1975, pp. 39-40. Since blind persons are often excused from jury duty, the author relates his personal experiences in serving his month's term at superior court in the District of Columbia.

A Checkered Career, by Robert Nealey. *Nat-Cent News* (National Center for Deaf-Blind Youths and Adults, 105 Fifth Avenue, New Hyde Park, New York 11040), Vol. 5, No. 2, January 1975, pp. 16-23. Mr. Nealey, who is totally deaf and has only light perception, has been playing checkers for over 55 years and is regarded as the greatest blind checkerist in the game. It has been announced that a blind challenger is being sought, world-wide, to challenge him to a match for the blind championship of America or the world. An introduction to this article (pp. 13-15) gives biographical background for Mr. Nealey.

A Look at "Workshops" for the Blind in Russia, by Tom Parker. *The Braille Forum* (106 N.E. 2nd Street, Oklahoma City, Oklahoma 73104), Vol. 13, No. 2, September-October 1974, pp. 16-21. An abridged version of a report to the members of the National League of the Blind (England) following a visit to Russia made by several members of the League as guests of a Russian trade union.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook *for the* Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Agency Administration

Helping Skills: A Basic Training Program, by Steven J. Danish and Allen L. Hauer. Behavioral Publications, (72 Fifth Avenue, New York, N.Y. 10011), 1973. $4.95. Teachers handbook, 62p. and student workbook, 122p. This manual is a guide to teaching paraprofessional, human service, and social service personnel the basic helping skills to aid them in meeting the needs of their clients.

Agencies in the Computer Age, by George Hoshino and Thomas P. McDonald. *Social Work* (National Association of Social Workers, 49 Sheridan Avenue, Albany, New York 12210), Vol. 20, No. 1, January 1975, pp. 10-24. The article illustrates the way an agency can best utilize the capabilities of the modern computer for purposes of management, program planning, evaluation, and research.

Videotape Programming for Social Agencies, by David Katz. *Social Casework* (44 East 23rd Street, New York, N.Y. 10010), Vol. 56, No. 1, January 1975, pp. 44-51. For agencies, the key to successful use of small system closed-circuit television is learning how to move the particular audience to react and interact with program material.

Rehabilitation Centers for the Blind: What Are They, and What Should They Do? by Manuel Urena. *The Braille Monitor* (National Federation of the Blind, 2652 Shasta Road, Berkeley, CA 94708), February 1975, pp. 74-81. The article briefly covers the history of rehabilitation-orientation centers. Through this history, the author shows that a fundamental concept of these centers was that "the real handicap of blindness lies not in overcoming the physical disability—through the learning of endless skills—but rather in constructive attitudinal changes of the blind person and those around him." The author further states that the current trend toward standardized services has sacrificed this fundamental concept of individual rehabilitation. He suggests a guideline that agencies could follow to restore this original philosophy.

Aging

About Aging: A Catalog of Films, Andrus Gerontology Center (University of Southern California, University Park, Los Angeles, California 90007), $3.00 plus 25¢ postage. Contains information on 230 films dealing with such topics as training volunteers to work with the aged, community programs and services, geriatric nursing, and mental health care. Data on the rental and purchase costs of the films is included.

Protecting Older Americans Against Overpayment of Income Taxes, A Checklist of Itemized Deductions, by the Senate Special Committee on Aging. Available in large print from Superintendent of Documents (U.S. Government Printing Office, Washington, D.C. 20402), 8p. 30¢. Recent hearings of the Senate Special Committee on Aging have shown that large numbers of older Americans needlessly overpay their taxes because they are unaware of the helpful deductions listed in this booklet.

Deaf and Hearing Impaired

Post-Rubella Children in Special Educational Programs for the Hearing Impaired, by Carl Jensema. *Volta Review* (Alexander Graham Bell Association for the Deaf, 3417 Volta Place, N.W., Washington, D.C. 20007), Vol. 76, No. 8, pp. 466-473. Through a nationwide survey of 43,946 students enrolled in special education programs for the hearing impaired during the 1972-73 school year, it was discovered that 17.6 percent of the students have hearing losses due to maternal rubella.

The Telephone and the Deaf, by F. A. Caligiuri. *The Optimist* (Idaho State School for the Deaf and the Blind, Gooding, Idaho 83330), Vol. 55, No. 5, January 1975, pp. 1-2. The author reviews the existing telephone communication systems for the deaf and outlines the need for a more practical, inexpensive system.

Lisa and Her Soudless World, by Edna S. Levine and illustrated by Gloria Kamen. Human Sciences Press (72 Fifth Avenue, New York, N.Y. 10011), 1974, 30p. $5.95. This book, written for early elementary school-aged children, tells the story of a little girl who is deaf. It describes how she learns to use a hearing aid, to read lips and sign language, and to speak.

Education

Identifying Handicapped Children for Child Development Programs, by M. L. Hennon. Humanics Press (881 Peachtree Street, N.E., Suite 114, Atlanta, Georgia 30309). $4. This book was designed as a manual to help child development programs recruit and integrate handicapped children into their classrooms. It

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Employment

Proceedings of the National Symposium on Employment of the Visually Impaired in Secretarial Fields, by the Visually Impaired Secretarial Transcribers Association (VISTA, c/o American Council of the Blind, Suite 700, 818 18th Street, N.W., Washington, D.C. 20006). Proceedings of the December 11-13, 1973 conference. The workshops held at the conference covered such topics as finding a secretarial job, adapting job skills to overcome the problems presented by the visual handicap, demonstrating abilities, and advancing in position.

Federal Benefits

The Implementation of SSI: Guaranteed Income or Welfare? by Beryl A. Radin. *Public Welfare,* (American Public Welfare Association, 1155 16th Street, N.W., Suite 201, Washington, D.C. 20036), Vol. 32, No. 4, pp. 7-19. This article describes some of the aspects of the implementation effort and the administrative problems involved in setting up the Supplemental Security Income (SSI) program. It also analyzes the impact of SSI on other agency programs.

Limited Vision

Educational and Vocational Placement, and Low-Vision Corrections in Albinism, by Gerald Fonda, Henry Thomas, and George V. Gore, III. *The Sight Saving Review,* Vol. 41, No. 1, Spring 1971, pp. 29-36. Reprints available from Low Vision Rehabilitation Service, St. Barnabas Medical Center, Old Short Hills Road, Livingston, New Jersey 07039. Based on a study of 253 albino patients, this article discusses the particular visual problems of people afflicted with albinism and the effect of low vision aids on their educational and vocational placement.

Medical Sciences

Visual Pigments and Color Blindness, by W.A.H. Rushton. *Scientific American* (415 Madison Avenue, New York, New York 10017), Vol. 232, No. 3, March 1975, pp. 64-74. The author discusses the research that has been done to discover what mechanisms of the human eye enable it to perceive color and how this relates to color blindness. The studies show that color vision depends on three types of cone cells, each containing one of three visual pigments. Those who are color blind either lack one of the pigments or have anomalous pigment in one type of cone.

Pamphlets

Suggested Procedures for Parents and Educators in Reaching Mutual Agreements on Special Education Matters. Bureau of Pupil Personnel and Special Educational Services (P.O. Box 2219, Hartford, Connecticut 06115). Written in Spanish and English. Outlines the major provisions of section 10-76h, a review and appeal procedure established by law in Connecticut to settle disputes between parents and educators over special education services for handicapped children.

Personal Management

Independent Living for the Handicapped and the Elderly, by Elizabeth E. May, Neva R. Waggoner, and Eleanor B. Hotte. Houghton Mifflin Company (110 Tremont Street, Boston, Mass. 02107), 1974. 271 p. Illus. $9.95. This book places emphasis on the rehabilitation of persons with physical disabilities and the elderly in the everyday aspects of life within the home and community.

Recreation

Summer Camps for Handicapped Kids, by Gerald M. Knox. *Better Homes and Gardens* (1716 Locust Street, Des Moines, Iowa 50336), March 1975, pp. 24, 36-37. This article briefly discusses the types of summer camps available for handicapped children and suggests several ways parents can go about finding the right camp for their child.

Physical Education and Recreation for Individuals with Handicapping Conditions, by the Information Research Utilization Center. American Alliance for Health, Physical Education, and Recreation (1201 16th Street, N.W., Washington, D.C. 20036), 1975. $2.00. A brief analysis of the literature. Includes examples of recreation programs for handicapped people.

Recreation Is for Handicapped People, by Committee on Recreation and Leisure (President's Committee on Employment of the Handicapped, Washington, D.C. 20210), 1975. This brochure discusses the value that recreation has for handicapped persons. It also includes participation ideas and resources.

Sex Education

Sexuality: A Human Condition, by Anne H. Berkman. *Journal of Rehabilitation* (National Rehabilitation Association, 1522 K Street, N.W., Washington, D.C. 20005), Vol. 41, No. 1, January 1975, pp. 13-15,37. The author stresses the importance of positive sexual identity and self-esteem in the rehabilitation of handicapped people. She suggests a combination of rehabilitation and sex counseling to extend the effectiveness of the counselor and increase the rehabilitation potential of the client.

Birth Control: All the Methods That Work, And the Ones That Don't, by Planned Parenthood of New York City. Braille edition published by Iowa Commission for the Blind (4th and Keosauqua Way, Des Moines, Iowa 50309), 24p. $6.50. The booklet covers the basic facts about reproduction and the latest information on contraceptive methods, voluntary sterilization, and abortion. Suitable for all age groups.

Statistical Surveys

The Deaf Population of the United States, by Jerome D. Schein and Marcus T. Delk, Jr. National Association of the Deaf (814 Thayer Avenue, Silver Spring, Maryland 20910), 336p. Hardcover $10, paperback $7.50. National census of the noninstitutionalized deaf population. Contains such information as size and composition of family, hearing ability of family members, education, occupation, income, insurance problems, health, and vocational rehabilitation.

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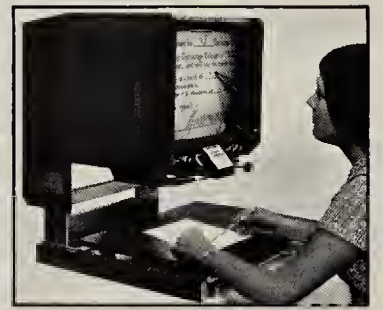

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News in Brief

■ The National Institute for Rehabilitation Engineering (NIRE), Pompton Lakes, New Jersey 07442, has announced the availability of its new pocket calculator for blind and visually impaired persons. The battery operated calculator features a bright blue-green display with numerals three-eighths of an inch high; an engraved, color-coded keyboard; and full memory functions. The calculator, priced at $79.95, may be purchased either by visiting NIRE's low vision clinic or through the mail. Those who wish to order the calculator by mail must include information stating their best corrected vision in terms of type size that can be read.

■ *Accent on Living,* a consumer-oriented magazine for the physically disabled, is featuring three articles of conern to blind persons in its Spring issue. The articles are: "(AID) for Blind Seen in New Alphabet," about the Fishburne braille method for labelling various items; "Blind May See Through Plastic Eyes"; and "Blind Skiers Organization." Subscriptions to the magazine are available free to handicapped individuals who can't pay the subscription price. For more information write to Accent, Box 700, Bloomington, Illinois 61701.

■ The American Enterprise Institute for Public Policy Research (1150 17th Street, N.W., Washington, D.C. 20036) is offering a new program of public policy forums in videotape, film, or cassette form. Each program features a debate or general discussion about the pressing social and political issues of our time. Two of the programs being offered are "National Health Insurance" and "Social Security: Universal or Selective."

■ The Library of Congress, Division for the Blind and Physically Handicapped has announced that *Talking Book Topics* and *Braille Book Review* print editions are back on a regular basis. Both magazines are published bimonthly.

■ The National Interfaith Coalition has released the first issue of its monthly program bulletin, which is designed as a manual to assist congregations in meeting the needs of the elderly in their community. This issue, "Program Areas of Concern in Ministry to, for, and with the Aging; Recommendations for Action from the 1973 NICA Assembly," offers a number of suggestions to improve conditions for the aging.

■ *Guidelines for the Administration of Groups Producing Reading Materials for the Visually Handicapped* is the most recent book in the National Braille Association's series of "how to" manuals to aid group and individual transcribers of braille, large type, and tape. The *Guidelines* includes a general section on administration of a group and specific sections on braille, large type, and tape transcribing, with suggested forms for each. It also includes considerations for starting a group; a checklist of equipment, supplies and teaching manuals; responsibilities of administrative staff; bookkeeping procedures; and the procedure for processing transcriptions. Copies of the *Guidelines* are available free of charge from the Division for the Blind and Physically Handicapped, Library of Congress, 1291 Taylor Street, N.W., Washington, D.C. 20542.

■ Two new courses are available in "Relevant Braille," a system of simple, easy to read braille that can be used by non-braille readers to note down names, addresses, phone numbers, etc. One course, developed by Hadley School for the Blind, Winnetka, Illinois 60093, is five correspondence lessons with instructions in cassette form. The course designed by Volunteers for the Visually Handicapped, 6935 Wisconsin Avenue, Suite 600, Chevy Chase, Maryland 20015, utilizes jumbo dots to make learning relevant braille easier for those persons who have had tactile difficulties with regular braille.

■ Handicapped persons, public and private non-profit sheltered workshops, have been extended the opportunity to get loans up to $350,000 under the Handicapped Assistance Loan Program of the Small Business Administration. This enables disabled people to establish, acquire, or operate a small business, and enables private or public nonprofit sheltered workshops to produce and provide marketable goods and services. Experience, competency, and ability of proposed owner and operators of small business concerns must be demonstrated and the loan repaid from earnings of the business.

■ A method of studying the inner eye, called fluorescein angiography, offers hope to elderly patients suffering from limited blindness due to macular degeneration associated with diseases such as high blood pressure, diabetes, and kidney and central nervous system disorders. This method, according to Dr. Abraham L. Kornzweig, director of the department of ophthalmology at Jewish Home and Hospital for Aged, New York City, helps doctors to understand the disease and treat some types. By injecting fluorescein dye into the median cubital vein at the patient's elbow and photographing its movement through the retinal circulation, clinicians can study numerous changes. If the dye leaks from the choroidal or retinal capillaries, they use a fine laser beam to stop the leaks and improve vision. This treatment is now being tested nationally on patients with diabetic retinopathy.

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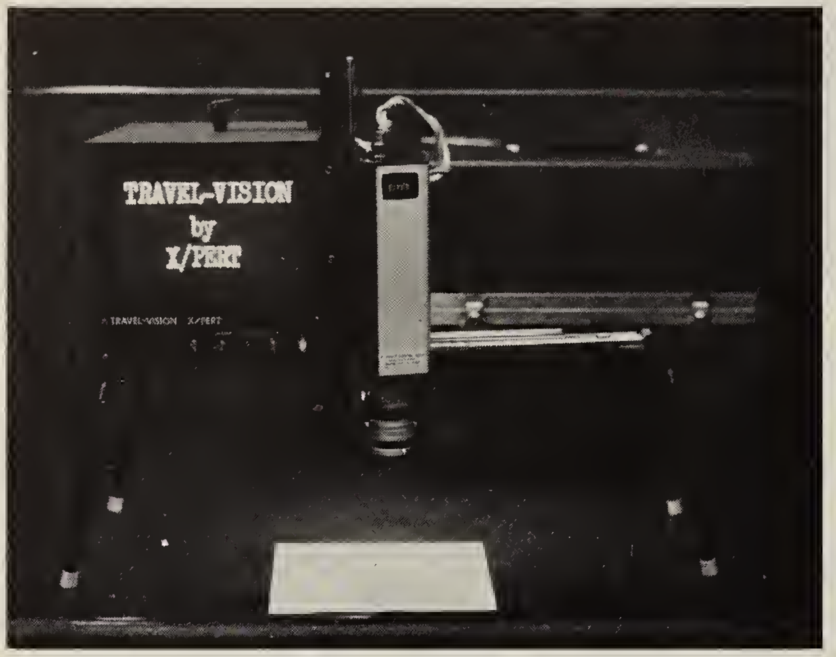

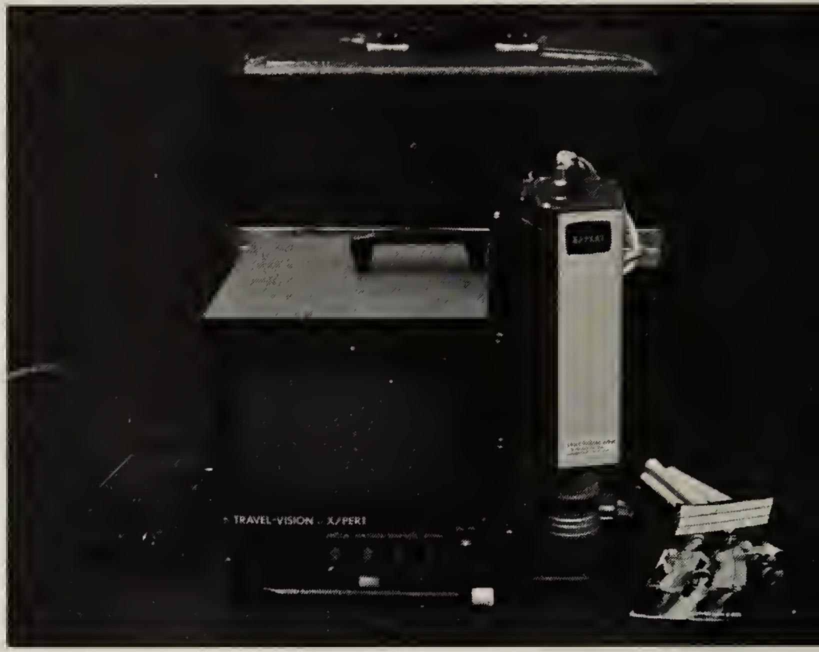

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■ The Veterans Administration has established six new geriatric research and clinical centers to provide a focus for further research into the problems and care of the aging. The new centers are located in Little Rock, Ark., Palo Alto, Cal., and Bay Pines, Fla. An advisory board has been appointed to guide the research on aging and the operation of the centers.

■ Renaissance Products, Inc. and Penn Quality Products, both of Lansdowne, Pennsylvania, agreed to a permanent injunction in Delaware County Common Pleas Court barring them from misrepresenting that they employ and benefit blind workers or that they are associated with non-profit charitable organizations. Pennsylvania's Attorney General charged that the companies were falsely implying in telephone solicitations that some proceeds from the sale of their products aided the handicapped. In doing so, the companies were able to sell their products for two-and-a-half times the price of comparable products.

■ The Mississippi Association of Workers for the Blind recently began an awards program. At their 1974 convention three awards were presented. Senator Ellis Bodron received an award for being a totally blind person who has successfully prepared for and achieved recognition in a professional career. Reed Manufacturing Company of Tupelo was presented an award for their contribution in the employment of blind people. Mary Kate Smith, a plant supervisor at Reed, was given an award for her participation in the training of Reed's blind employees.

■ Therapeutic Recreation Information Center (TRIC), has been relocated to the University of Oregon, 1597 Agate Street, Eugene, Oregon 97403. TRIC is a computer based dissemination center for published and unpublished annotated bibliographic reference materials in the field of recreation for handicapped, disabled and aging persons. Major files, those containing 100 or more abstracts, may be purchased from TRIC on a sliding scale basis, the price depending on the number of abstracts in the file. Minor files, those with less than 100 abstracts, are priced at $5.00 each. Individually designed search files are also available. For further information contact the Therapeutic Recreation Information Center.

■ The Center for Studies in Aging at North Texas State University is offering M.A. and M.S. degree programs in Studies in Aging. The degree programs include Administration of Retirement and Long-Term Care Facilities for the Aged, and Program Planning and Related Fields. A summer institute on aging will also be offered. Information is available from the Center, Box 13438-NTSU Station, Denton, Texas 76203.

■ Books on childbirth, breastfeeding, and motherhood are available in braille and tape from La Leche League International, 9616 Minneapolis Avenue, Franklin Park, Illinois 60131. A thermoform copy of the publications list is also available for $1.00 from La Leche League.

■ A cross country ski trip for blind people, called "Race for Light," was held February 23, 1975, in Colorado. Sixty blind skiers and 60 sighted instructors, from the United States, Norway, Canada, and Africa, participated in the international ski event. "Race for Light" was sponsored by the Lions Clubs of Norway and Colorado and the Sons of Norway Foundation of the United States. The first event of its kind in the United States, the "Race for Light" was designated an official event of America's bicentennial. Similiar cross country ski events for blind people in the U.S. are now in the planning stages.

■ The Optacon Fund, with the help of grants and contributions, has been able to provide low interest loans to visually handicapped individuals who wish to purchase Optacons. The Fund hopes to be able to expand the loan program to include other devices that promote the independence of blind individuals. For more information on the program, write the Optacon Fund, Inc., P.O. Box 280, Menlo Park, California 94025.

■ The Library of Congress, Division for the Blind and Physically Handicapped (DBPH), 1291 Taylor Street, N.W., Washington, D.C. 20542, has published *Volunteers Who Produce Books: Braille, Large Type, Tape,* a complete listing of volunteer transcribers and proofreaders in the United States. For more information about the book, write to DBPH.

■ The Xavier Society for the Blind (154 East 23rd Street, New York, N.Y. 10010) will send its 1975 Braille Catholic Calendar free of charge to anyone in the United States or Canada. The calendar indicates each Sunday's feast, as well as other important feasts occuring within the month.

■ The American Council of the Blind's board of directors approved the creation of the Robert S. Bray Award at its meeting in November 1974. A special committee will be appointed to draw the guidelines and qualifications for recipients of the award. Through this award the Council hopes to keep alive the memory of the selfless dedication of Robert S. Bray, who served as chief of the Division for the Blind and Physically Handicapped, Library of Congress, from 1957 to 1972.

Appointments

■ National Industries for the Blind: **Eivind H. Johansen,** chairman, Committee for Purchase from the Blind and Other Severely Handicapped.

■ Jewish Guild for the Blind: **Mrs. Charles S. Port,** president of the women's division.

■ Clovernook Home and School for the Blind: **Gerald W. Mundy,** executive director.

■ U.S. Congress, Office of Technology Assessment: **Olin E. Teague,** chairman of the board.

■ National Accreditation Council, new members of the board of directors: **Mrs. W. G. Derouin,** Oregon School for the Blind; **Hilliard F. Kirby,** Asheville, N.C.; **Roy Kumpe,** Arkansas Enterprises for the Blind; **Elizabeth M. Lennon,** Western Michigan University; **Durward K. McDaniel,** American Council of the Blind; **David L. Schnair,** Blinded Veterans Association; **George E. Stocking,** Veterans Administration Hospital, Miami, Fla.

Awards

■ Alabama Blind Worker of the Year: **Ruth Elizabeth Penny,** seamstress, Alabama Industries for the Blind.

Retirements

■ Hadley School for the Blind: **Donald W. Hathaway,** president.

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Coming Events

June 8-12 Special Libraries Association, Chicago.

June 15-19 American Medical Association, 124th Annual Meeting, Atlantic City, N.J.

June 15-21 American Physical Therapy Association, Anaheim, Cal.

June 18-20 Association for Education of the Visually Handicapped, North Central Region, Madison, Wisc.

June 21-22 International Federation on Ageing, Third Conference, Jerusalem.

June 22-27 Tenth International Congress of Gerontology, Jerusalem.

June 23-27 American Home Economics Association, Annual Meeting, San Antonio, Texas.

June 24-27 Goodwill Industries of America, Delegate Assembly, San Francisco.

June 25-28 Lions International Convention, Dallas.

June 25-29 National Association for Hearing and Speech Action, Annual Meeting, San Diego, Cal.

June 29-July 3 International Congress of Biomechanics, Jyvaskyla, Finland.

July 20-23 American Association of Workers for the Blind, Biennial Meeting, Atlanta.

July 28-August 1 International Conference of the Joint Council for the Education of Handicapped Children, Canterbury, England.

July 31-August 8 World Federation of the Deaf, 7th World Congress, Washington, D.C.

August 7-9 Association for Education of the Visually Handicapped, South Central Region, Little Rock.

August 13-15 Institute of Gerontology, University of Michigan-Wayne State University, Conference on "The Economics of Aging: Towards 2001," Ann Arbor.

Sept. 2-5 American Public Health Association, Northeast Regional Conference, Boston.

September 21-25 American Academy of Ophthalmology and Otolaryngology, Dallas.

September 24-28 American Academy for Cerebral Palsy, New Orleans.

Sept. 28-Oct. 4 The National Council on the Aging, 25th Annual Meeting, Washington, D.C.

Oct. 11-15 National Rehabilitation Association, Annual Conference, Cincinnati.

Oct. 14-18 American Occupational Therapy Association, Annual Conference, Milwaukee, Wisc.

October 15 White Cane Safety Day.

Oct. 16-23 National Conference of Catholic Charities, Annual Meeting, Cincinnati, Ohio.

Oct. 19-23 National Recreation and Park Association, Dallas.

Oct. 22-25 National Association of Social Workers, Professional Symposium, Hollywood-by-the-Sea, Fla.

November 7-8 Association for Education of the Visually Handicapped, Middle Atlantic Region, Wilmington, Del.

November 12-13 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Little Rock, Ark.

Nov. 16-19 American Association of Homes for the Aging, 14th Annual Conference and Meeting, San Diego, Cal.

Nov. 16-20 American Public Health Association, Annual Meeting, Chicago.

Dec. 3-5 National Council on Philanthropy, 18th National Conference, Washington, D.C.

Classified Listings

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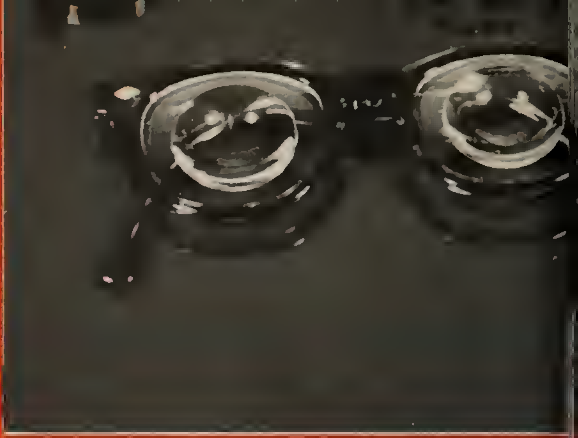

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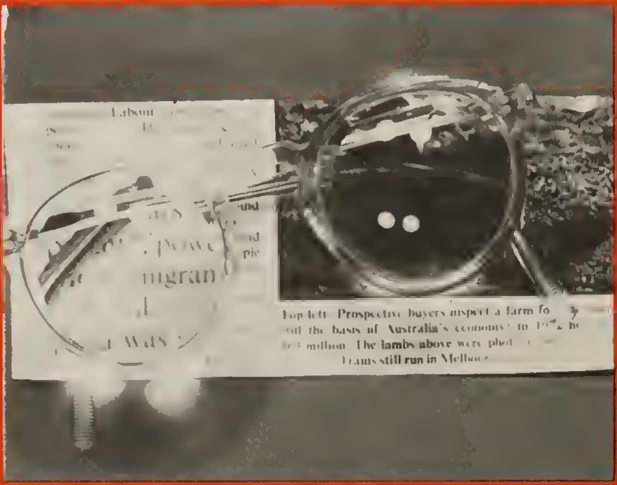

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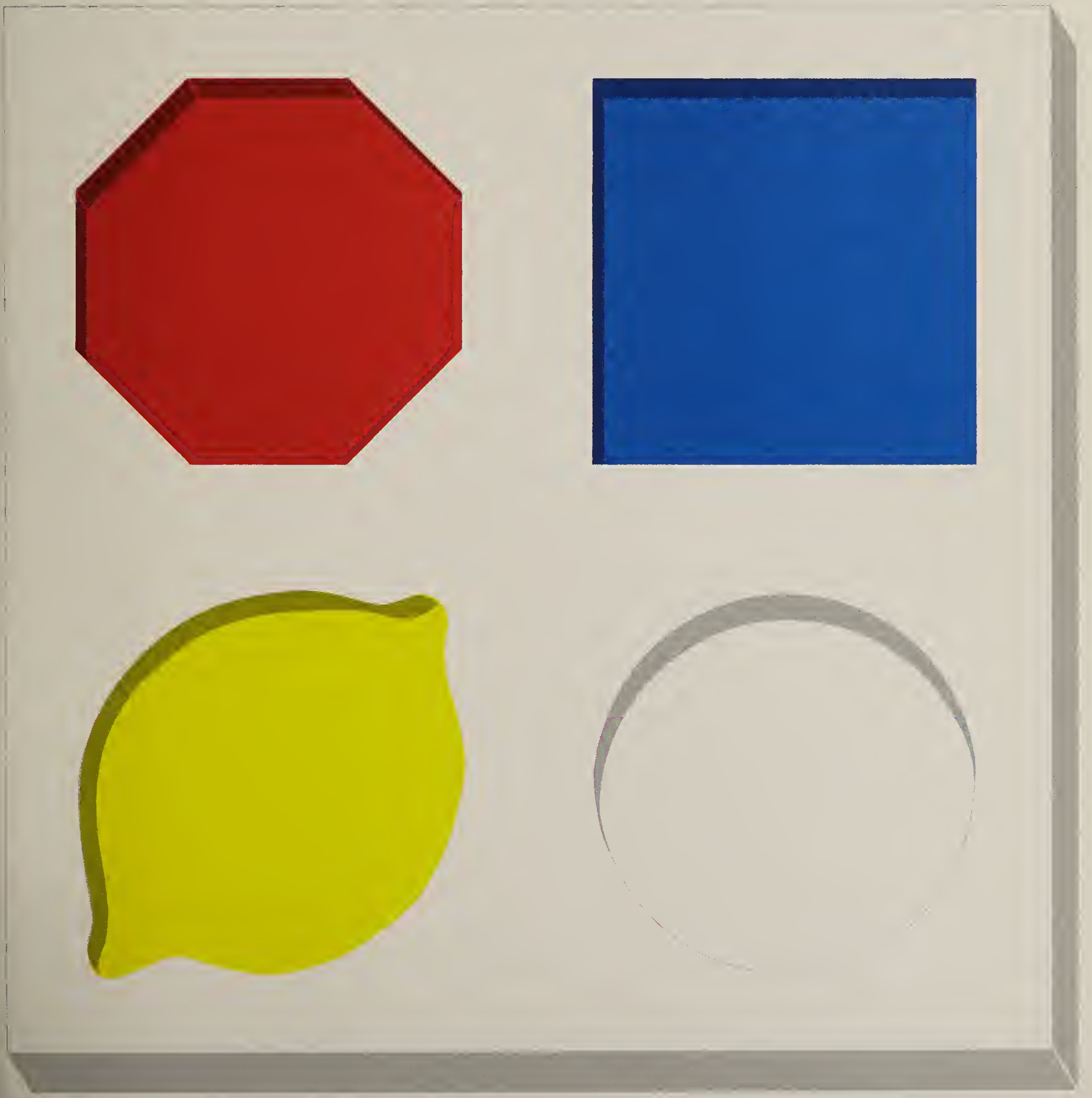

The Papy-Lamon Minicomputer for Blind Children: An Aid in Learning Mathematics

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The Papy-Lamon Minicomputer for Blind Children: An Aid in Learning Mathematics

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Abstract: *The principle of learning mathematical concepts through the manipulation of concrete aids is utilized in this adaptation of the Papy Minicomputer for the use of blind and visually handicapped children. The device consists of three boards with cut-out shapes for the number values of one, two, four, and eight and multiples of ten and a hundred. Numbers are generated on the boards by placing pawns in the variously shaped regions; arithmetical operations are carried out by moving the pawns from region to region according to four simple rules.*

▪ Today, a vast pool of didactic inventions, ranging from concrete apparatus providing important manipulative and sensory experiences to symbolic games of various kinds, are essential to modern techniques for the teaching and learning of elementary school mathematics. Such methodology capitalizes on the relationship of the sensory systems—auditory perception, tactile discrimination, and visual association—to the learning process. In the case of the use of concrete learning aids or models, learning through sensory exploration takes place before any symbolization is introduced to the child.

PHYSICAL TO MENTAL STRUCTURE

It is reckoned that a correspondence develops between the perceptual or physical structures of the apparatus employed and the mental structures or intuitive cognition which they evoke. Furthermore, after ample experience with the physical structure, it is felt that the mental structure eventually remains in the mind of the child, even when the apparatus is no longer present; that is, a "passage" from the physical to the mental takes place. Despite differences in the design of the materials, they evoke only one kind of mental structure, and that structure, it is conjectured, is the same for all children. This is because children do not make abstractions directly from the handling or manipulating of learning aids, but, rather, the abstractions arise through the children coming to appreciate the significance of the operations performed with the materials themselves.

In line with this theorizing, educators have suggested that all children should learn mathematical skills and concepts through sensory experiences with concrete learning models before any symbolization is attempted. Early access to a variety of environmental aids (i.e., pens, cups, etc.) and commercially made, structured aids (i.e., Cuisenaire Rods, Multi-Base Blocks, etc.) has allowed teachers to present mathematical ideas which, prior to this availability, were thought to be inaccessible to children or undesirable for them to attempt to understand.

Although the use of concrete learning aids has been accepted all over the world and has resulted in quite a few successes with most children, it has produced psychological impacts differing dramatically with each kind of child (i.e., normal, handicapped, etc.) and in the responsibilities left with the teacher. This is mainly due to the lack of information on how the devices should be used, when, with whom, and, if a learning aid is to be used, which one of the many available ones should be selected in order to insure meaningful learning and a positive transfer from the concrete-manipulative to the abstract-symbolic. In other words, the suggestion that modern approaches to the teaching of mathematics be used with all children often fails to take into account the fact that children may be different both cognitively and physiologically.

Handicapped and normal children have been considered relatively "equal" as far as their mathematical education is concerned. If such "equality" is derived from the fact that handicapped children should be able to function equally well in a competitive, technological society, then, of course, this makes sense; their needs for mathematical maturity should be no different from normal children. But what makes a handicapped child successful in his encounters with mathematical learning experiences is different from what makes the normal child succeed, because the manipulative and sensory experiences must be geared to the sensory modalities through which he learns.

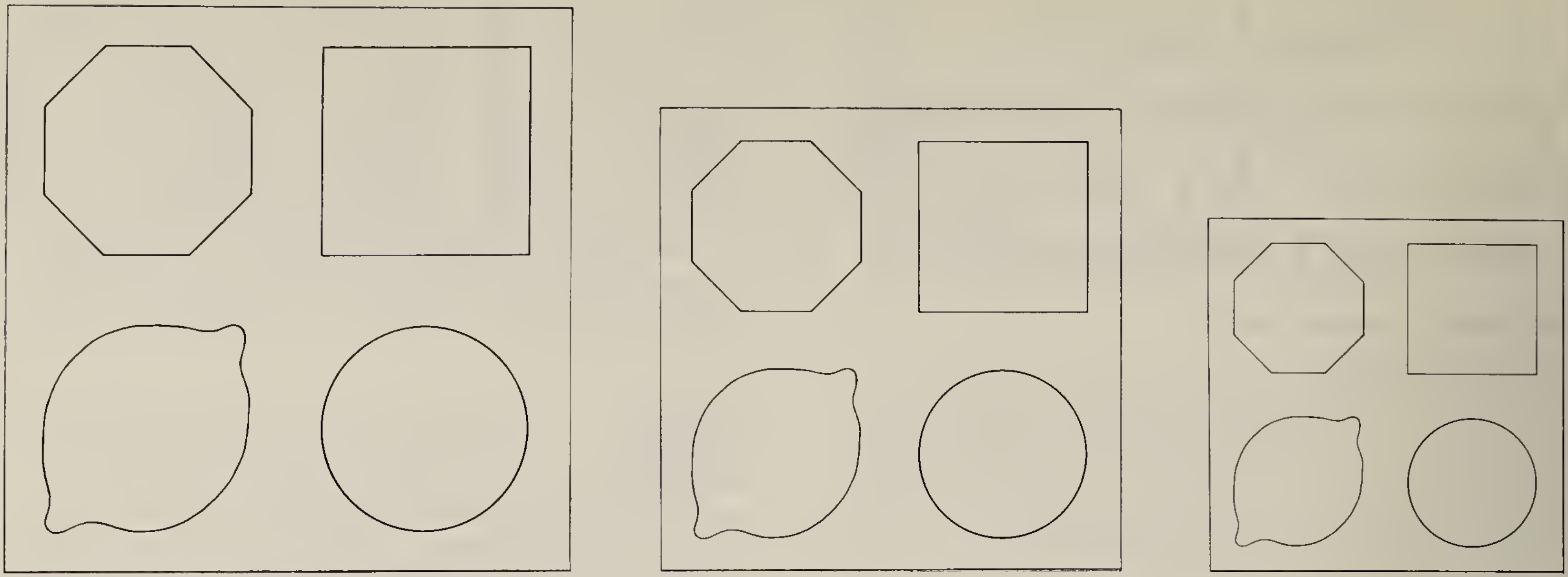


Figure 1. The Papy-Lamon Minicomputer

Hence, if we want to teach handicapped children the same mathematical skills and concepts as those offered to normal children, then certain adaptations must be made in the tools used to do this.

As noted above, the learning of mathematics relies mainly on visual input. When vision is absent, stimuli must be altered and adapted, and auditory and tactual presentations must be stressed. For the blind child, then, the concrete learning experience relies mainly on the tactile features of the concrete model. Specific changes in the design characteristics, as well as in the mode of communicating the idea or skill, may be imperative if a smooth transition between the sensory input and the interpretation of such input is to be insured. This is exactly what was kept in mind in the design and construction of the Papy-Lamon Minicomputer.

PAPY-LAMON MINICOMPUTER

The Papy-Lamon Minicomputer for Visually Handicapped Children is a simple, structured learning aid designed to acquaint the blind, as well as the visually impaired, child with the basic principles of arithmetic.

This device is a modified version of the Papy Minicomputer, devised for nonhandicapped children by the noted Belgian mathematician and mathematics educator, Georges Papy, and currently in use all over the world. It consists of three square boards, each different in size and each divided into four distinct colored regions. Each of these regions, cut out of the surface of the board, represents a particular numerical value: the circular, white region has the value of one; the lemon-shaped, yellow region, two; the square, blue region, four; and the octagonal, red region, eight. Accompanying the boards are a number of differently shaped and colored tokens or pawns, which, when placed in the appropriate regions of a board, enable the child to represent the numbers one to ten. Hence, utilizing three boards, numbers up to 999 can be generated and manipulated by the child. The shapes and the colors of the pawns have no mathematical significance—they simply allow the child to represent different numbers at the same time in any one region.

Before the child performs any actual operations with the Papy-Lamon Minicomputer, he must first become familiar with the three boards. During this acquaintance period he will learn the physical characteristics of the boards and their significance. First of all, he will find that there are small, medium, and large boards, that they are ordered, with the smallest to the right and the largest to the left, and that the

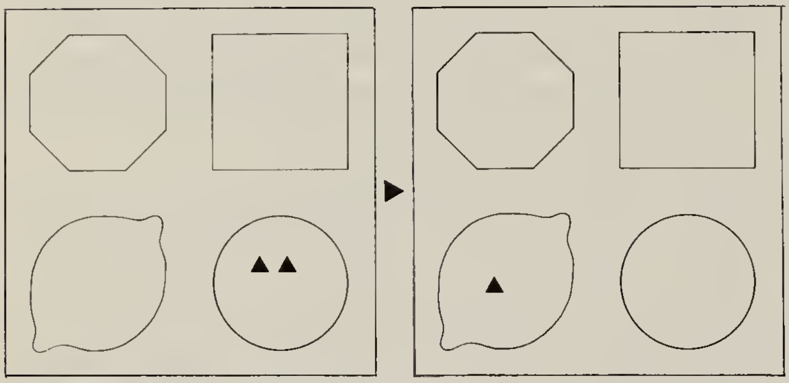


Figure 2. Example of Rule One

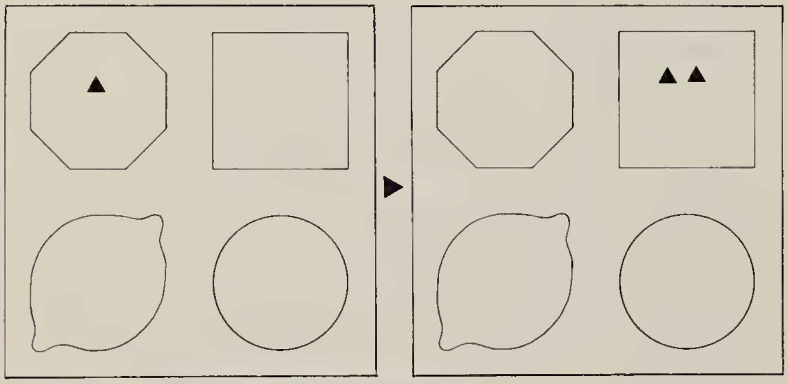


Figure 3. Example of Rule Two

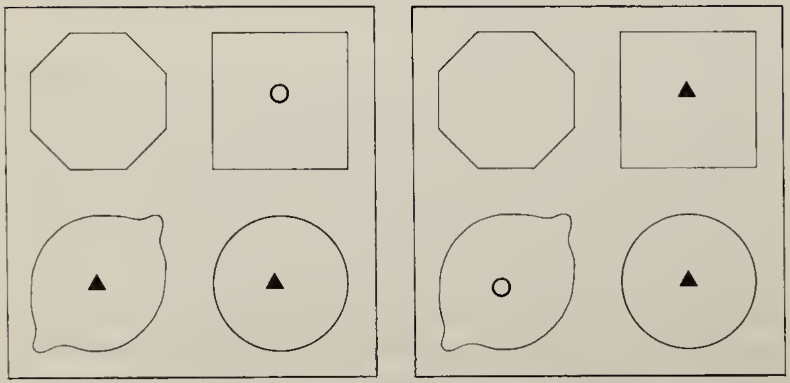


Figure 4. A Number Represented as the Addition of Two Other Numbers (Left: three plus four. Right: five plus two.)

circular region of each is in the lower right-hand corner (see Figure 1). Later, when the child begins to work with place value, this arrangement of the boards will become meaningful to him, and he will learn that the size of a board corresponds to the size of the values of numbers which can be generated on it.

Since the boards are the same except for size, any one board can be used as the exploration is continued. Ask the child what can be felt, and he will answer that he feels four depressed areas, each with a different shape. As he traces the contours of each depressed region with his finger, he will feel a pin on the border of each region; this is used as a starting and stopping point. As he traces the circular region at the lower right, he will feel a continuous path and will have the sensation of a whole or of one. As he traces the contours of the lemon-shaped depression at the lower left, he will feel two indentations before returning to the pin; in the square region at the upper right, four; and in the octagonal region at the upper left, eight. Each depressed region thus becomes associated in a certain way with a number. At the same time, he will become aware of the placement of each of these regions on the board.

Since this learning aid has been devised not only for the child with no useful vision at all (blind), but also for the child with limited vision (20/200 or less), the physical aspect of color has been incorporated. These children therefore can be asked the color of each region, or depression, and will come to associate white with one, yellow with two, blue with four, and red with eight.

Association of Regions and Values

Up to this point, a certain value has been naturally associated with each of the four regions, but the child has not been told that a region has a value. It is the pawns, which are introduced at this point, which take on value as they are placed in a depressed region. As with the regions, the pawns also have different shapes and colors, although these have no mathematical significance. The colors, black, orange, and green, are again of use to those who can distinguish between the colors. The shapes used are circular, triangular, and square. Although shape is sufficient to distinguish between the pawns, the colors do act as reinforcement for those with some vision. Colors other than the primary ones are used for the pawns so that they will not be associated with any particular region. For the child totally dependent on the sense of touch, this will need to be emphasized, since some of the shapes are the same as those used for regions.

Using the smallest board now, the child is asked to place one pawn in the circular region, and is told that this pawn now assumes the value of one. A second pawn is placed in the circle, also assuming the value of one; hence, the two pawns combined now represent the value of two. This process will be visual if the child can see the pawns, and tactual if he cannot. We continue by repeating this process in the lemon-shaped region, where the first pawn assumes the value of two, the second pawn the value of two again, and combined the value of four. In the square region, each pawn will assume the value of four, and in the octagonal region, the value of eight.

RULES OF REPLACEMENT

Since two pawns in the circular region have a total value of two, and one pawn in the lemon-shaped region also has a value of two, we can replace two pawns in the circular region with one in the lemon-shaped region (see Figure 2). Similarly, two pawns in the lemon-shaped region can be replaced by one pawn in the square region, and two pawns in the square region can be replaced by one in the octagonal region. Our first rule can then be stated as follows: *As one moves from right to left and up the board, two pawns in one region can be replaced by one pawn in the next region.*

Each of these moves is also reversible; since one pawn in the octagonal region has a value of eight, it can be replaced by two pawns in the square region, which would also have a total value of eight (see Figure 3). Similarly, one pawn in the square region can be replaced by two in the lemon-shaped region, and one pawn in the lemon-shaped region can be replaced by two in the circular region. This then gives us the second rule: *As one moves from left to right and down the board, one pawn can be replaced by two pawns.*

Each of the first nine natural numbers can now be generated on the board. The child, asked to illustrate "three," could have three pawns in the circular region or, after applying rule one, one pawn in the lemon-shaped region and one in the circular region.

In order to insure that there is a smooth transition between perception, conception, and symbolization for the visually handicapped child, it is necessary that the child use the braille symbol for each number as it is represented on the board. Consequently, as each number is introduced conceptually, the appropriate braille card should be placed beneath the board, and the child can thus make the association between each number and its braille representation.

USES OF DIFFERENT PAWNS

One kind of pawn is sufficient to use in representing each of the natural numbers. The use of different kinds of pawns is necessary in order to make a distinction between a state and an operation. If one kind of pawn is used, it will represent a state, i.e., that which has been accomplished or realized. The final product of an operation will always be represented by pawns of the same kind, that is, the same color and shape. But when we want to show an operation to the child, something which is active or dynamically in process, then we will need different kinds of pawns. Thus, we can represent static and dynamic notions through touch and, where possible, through vision.

How is this applicable at this point? Suppose we ask the child to represent the number "seven" on the board. This would be most simply done with one pawn in the square region (four), one in the lemon-shaped region (two), and one in the circle (one). But as we want the child to understand the different ways "seven" could be represented as a sum of numbers of lesser value, we could use different kinds of pawns. "Seven" might thus be represented as three (a triangular pawn in both the lemon-shaped and circular regions) plus four (a round pawn in the square region), or as five (a triangular pawn in both the square and circular regions) plus two (a round pawn in the lemon-shaped region). (See Figure 4.) The use of different pawns in an operational sense will be illustrated further when the fundamental operations are discussed.

The child should now be thoroughly familiar with the first two rules and with the formation of the natural numbers, one through nine, as they are represented in binary fashion on the smallest board. A second board, the middle-sized one, is again placed before the child, to the left of the small one. From his preliminary examination of the boards, the child knows that this board is only a larger version of the first one. He now places a pawn in the circular region of the second

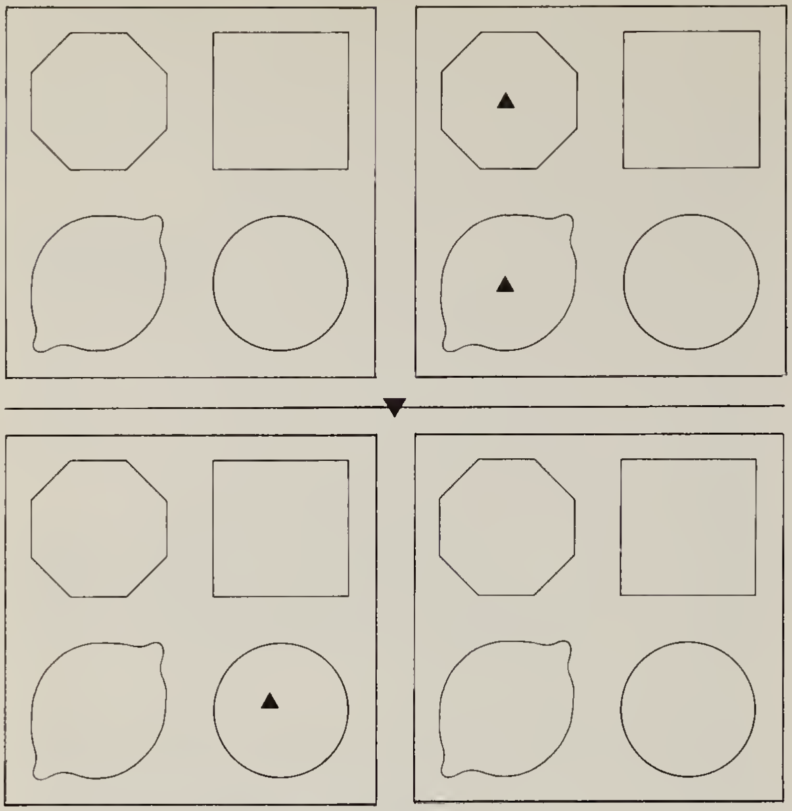


Figure 5. Example of Rule Three

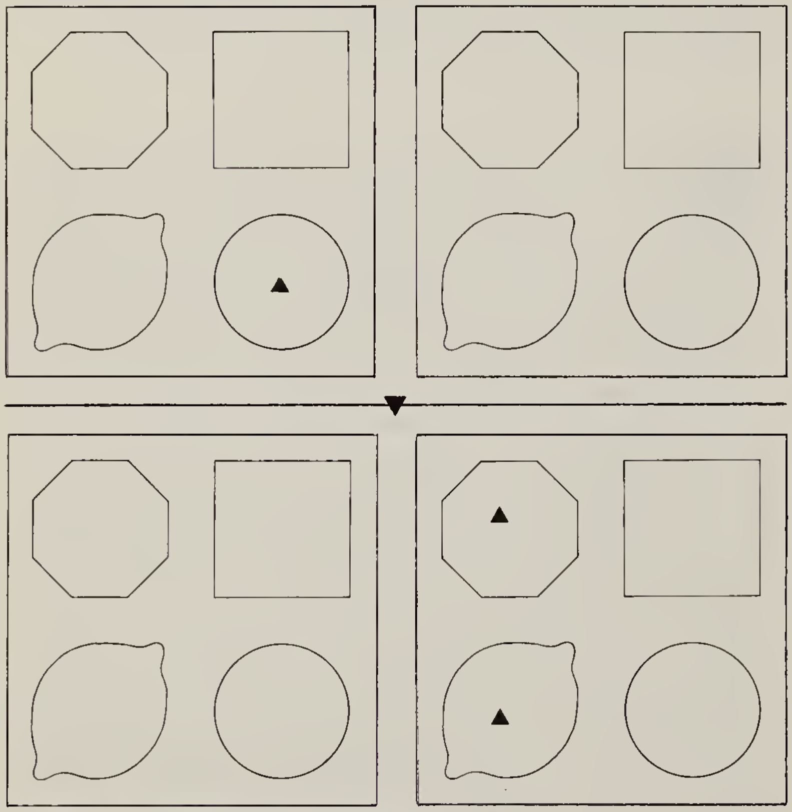


Figure 6. Example of Rule Four

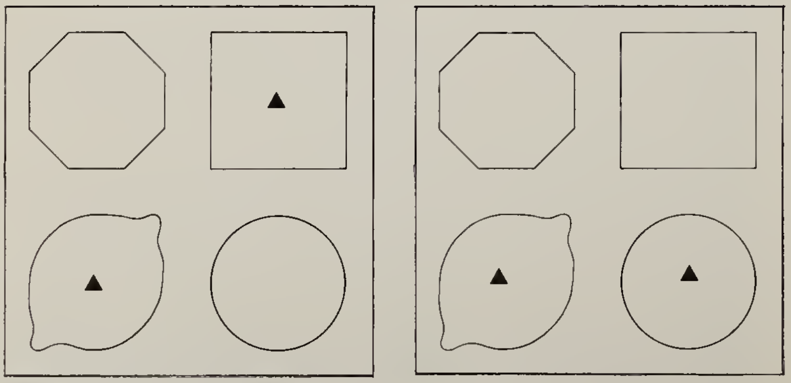


Figure 7. Representation of the Number "63"

board and is told that this pawn now assumes the value of ten. Similarly, a pawn placed in the lemon-shaped region assumes a value of 20, one in the square region a value of 40, and one in the octagonal region a value of 80. If two pawns are placed in the circular region, each with a value of ten, they have a total value of 20, and can be replaced by a pawn in the lemon-shaped region. It will soon become apparent to the child that rules one and two work exactly the same way on the second board as they do on the first. (In the remainder of the diagrams with this article, the boards will appear as one size, although in reality they are graduated in size.)

When working with only one board, the number "ten" could have been represented by one pawn in the octagonal region and one in the lemon-shaped region; now "ten" can be represented by a pawn in the next larger circular region. Since both representations have the same value, a replacement of one can be made for the other. This gives us two more rules. Rule three: *A pawn in the lemon-shaped region and a pawn in the octagonal region on one board can both be replaced by a pawn in the next larger circular region* (see Figure 5). And, rule four: *A pawn in a circular region can be replaced by two pawns on the next smaller board, one in the lemon-shaped region and one in the octagonal region* (see Figure 6).

Many new numbers can now be illustrated, and some skill should be achieved in representing two-digit numbers on the boards. For example, when asked to represent the number "63," the child would do so by placing pawns as follows: on the left-hand (medium-size) board, one in the square and one in the lemon-shaped region, and on the right-hand (small) board, one in the lemon-shaped region and one in the circular region (see Figure 7).

The Third Board

After some practice on two boards, it will be simple to reintroduce the third and largest board, in which a pawn in the circular region, the lemon-shaped region, the square region, and the octagonal region assumes the value of 100, 200, 400, and 800 respectively; the four rules apply exactly as they have in the past. Hence, if the child now wants to represent a three-digit number, such as 739, he would do so by placing pawns as follows: on the left-hand (large) board, one each in the square, lemon-shaped, and circular regions; on the center (medium-size) board, one in the lemon-shaped region and one in the circular; and on the right-hand (small) board, one in the octagonal region and one in the circular (see Figure 8).

ARITHMETICAL CONCEPTS

When the child has become facile in the manipulation of the pawns according to the four rules, he will have before him a powerful tool to be used in developing the concepts of addition, subtraction, multiplication, and division. Addition will be conceptualized as the putting together of two or more numbers in order to find their total value or sum. Different kinds of pawns can be used to represent each of the addends although this is not absolutely necessary. Hence, if the child is asked to find the sum of 43 and 29, he could first represent 43 using triangular pawns and 29 using round pawns (see Figure 9). Since the final state after an operation must be represented by only one type of pawn (and suppose we choose the triangular pawns to be the ones to be used for all the replacements), the application of rules one and three together will fulfill this requirement and will result in the answer of 72 (see Figure 10).

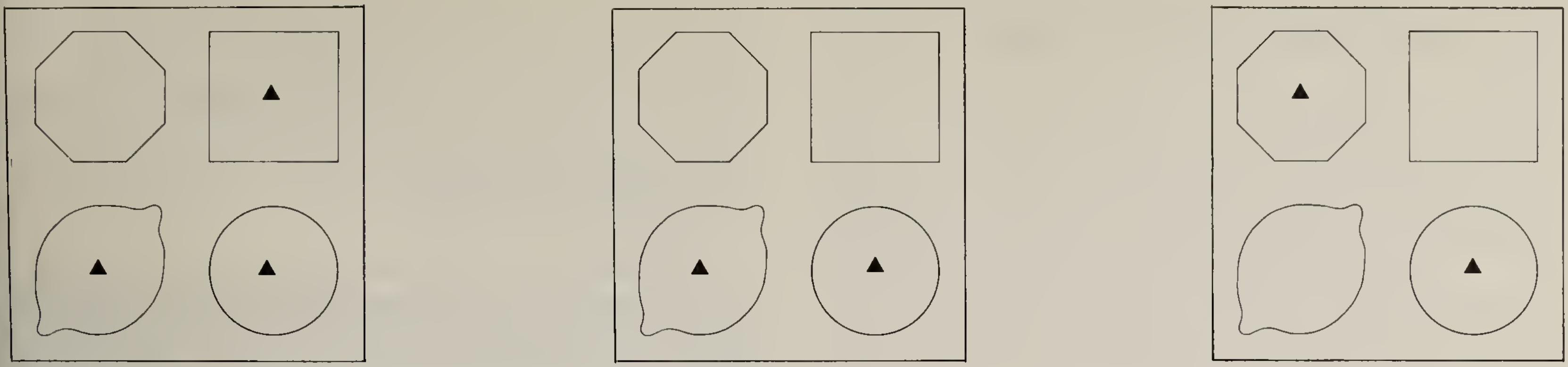


Figure 8. Representation of the Number "739"

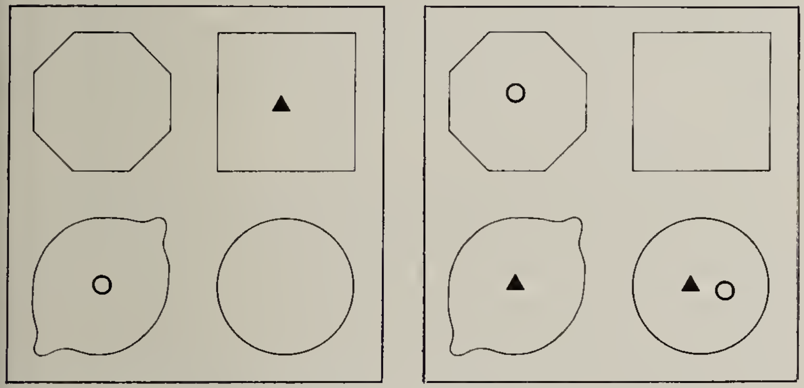


Figure 9. Representation of "43 Plus 29"

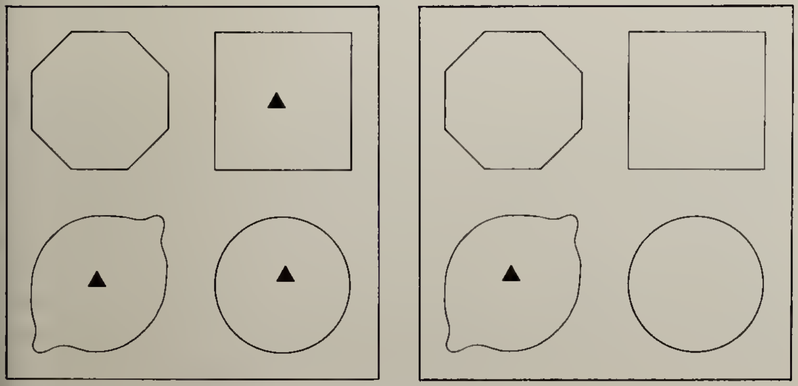


Figure 10. Answer to "43 Plus 29": "72"

Obviously, when the sum or even the addends are greater than 99, all three boards must be used. Caution is necessary in choosing the addends so that the sum is less than 1000, until the child realizes that in order to do such a problem, a fourth and larger board would be needed at the extreme left.

It is necessary to use pawns of two different shapes and colors in order to represent a subtraction problem on the Minicomputer. Suppose we decide that the minuend will be represented by triangular pawns and the subtrahend by circular pawns. The challenge then is to eliminate the presence of the circular pawns on the board by a one-to-one correspondence rule where a circular pawn and a triangular pawn in the same region cancel each other and can be removed from the board. For example, the problem "nine minus seven" would be represented by a triangular pawn in the octagonal and circular regions and a round pawn in the square, lemon-shaped, and circular regions. The first step, that of removing the unlike pawns from the circular region, is easily performed, but how are the other two circular pawns to be removed? Since working down increases the number of pawns by the second rule, we can replace the triangular pawn in the octagonal region with two in the square region, and two more pawns can be removed. The triangular pawn remaining in the square region is then converted to two pawns in the lemon-shaped region and the final round pawn is cancelled, leaving one triangular pawn in that region representing the final answer of "two."

FURTHER SUBTRACTION EXAMPLE

Children feel a great sense of achievement when they are able to perform complicated subtraction problems successfully on the Minicomputer. In order to illustrate this point further, let us take another example, one in which the subtraction process is not so easy: "152 minus 68."

The initial representation would be as follows: 152, triangular pawns in the circular region of the left board, in the square and circular regions of the center board, and in the lemon-shaped region of the board on the right; 68, round pawns in the square and lemon-shaped regions of the center board and in the octagonal region of the right board (see Figure 11). In working from right to left, we first need to remove the circular pawn in the right octagonal region. This is done by applying rule four to the triangular pawn in the next circular region (center board); this places a triangular pawn in the octagonal and lemon-shaped regions of the right board. We can now eliminate the pawns in the octagonal region. The pawns in the square region of the center board can also be eliminated. Rule two allows the two pawns in the smallest lemon-shaped region to be replaced by one in the square region of the same board. There is one last circular pawn to the eliminated, the one in the lemon-shaped region of the center board. We again apply rule four, this time to the triangular pawn in the largest circular region; this places triangular pawns in the octagonal and lemon-shaped regions of the center board, making it possible to cancel the last circular pawn from the board. The pawns remaining, one in the octagonal region of the center board and one in the square region of the smallest board, represent the value 84, the result of "152 minus 68."

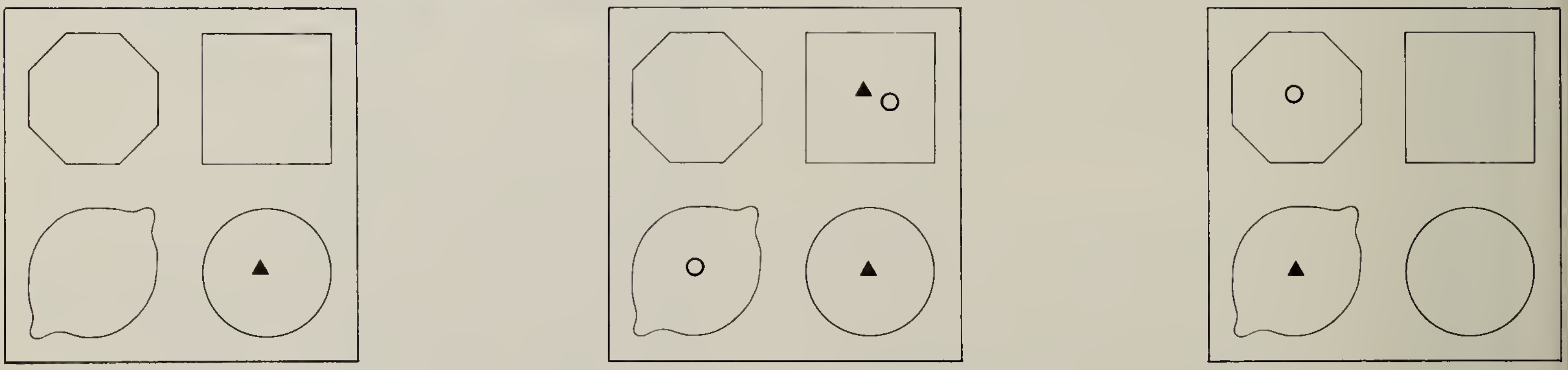
Multiplication and Division

Multiplication on the Minicomputer is based on the concept of repetitive addition. Since the Papy-Lamon Minicomputer is designed strictly for work with whole numbers, this presentation of multiplication is acceptable. Consequently, if one wants to find "three times seven," then seven would be represented three times on the boards and the product found by application of the rules. Only one-digit factors should be used when working on the Minicomputer, because the number of pawns required to multiply larger numbers would make the operation very cumbersome and confusing to the child. The purpose here is to teach the concept of multiplication, not to develop the child's skill in multiplication.

Division is presented as repetitive subtraction and is, thus, necessarily very limited in scope using the Minicomputer. As with multiplication, the goal here is to teach the child what division is all about and not to develop his skill in division. For example, "12 divided by three" is presented by asking the child how many times three can be subtracted from 12 before the boards are cleared. The numbers again need to be small and must, in this instance, be chosen so that there is no remainder. Otherwise, division becomes nothing but a confusing chore.

To conclude, let it again be emphasized that the utilization of the Papy-Lamon Minicomputer is primarily intended to develop an understanding of the concept of number and the fundamental operations in the arithmetic of whole numbers through sensory exploration by the child. Such concrete experiences should enable the visually impaired or blind child to tackle the later and more formal aspects of arithmetic with greater understanding and less mental stress.

Figure 11. Representation of "152 Minus 68"



Orientation and Mobility in Asia: The Hazards

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Mr. Jaekle, an orientation and mobility consultant with the American Foundation for Overseas Blind, New York City, has trained mobility instructors in Pakistan, India, Japan, Malaysia, Taiwan, Korea, Sri Lanka, and Singapore.

Abstract: *In this comparison of the hazards faced by the blind pedestrian in Asia and the United States, it is concluded that in Asia there must be much greater flexibility in the application of basic cane techniques. The absence of sidewalks, the crowded and obstacle-strewn streets, the wide variety of vehicles and roaming animals, deep storm drains, overgrown country trails, paddy fields, etc. require that orientation and mobility skills, including the use of touch and hearing, often be adapted to the true needs of the blind traveler.*

■ Throughout all of Asia there are striking differences in the physical geography and environmental conditions from country to country. These differences seem even greater when we compare the travel conditions faced by a blind person in the United States and Asia. In this regard, the physical similarity to American urban structure is the greatest in the cities of East Asia (Osaka, Taipei) and progressively lessens as we move westward through South and West Asia (Old Delhi, Lahore).

For the sake of comparison, Lahore, Pakistan, and Detroit, Michigan, as cities with roughly the same size urban population, can be considered representative of urban structure in each of their geographical areas. However, the mobility conditions the blind person finds in these cities are vastly different. I would like to focus attention on a comparison of these environmental conditions. At the same time, I hope the reader will keep in mind the great socioeconomic differences between these two parts of the world. Just as social and economic factors influence the life style of people, so also do they influence the physical environment in which these people live and walk around.

ONLY A FEW SIDEWALKS The most significant consideration concerning independent mobility in Asia is the widespread absence of sidewalks for the use of pedestrians. Even in those places where sidewalks do exist, the differences in their physical structure and the way in which the people use the "raised footpath," as it is often called, must also be considered. It would not be a misleading generalization to state that the majority of blind people in Asia do not have the advantage of sidewalks to protect, guide, and direct them in their independant travel.

Those of us who have taught blind people to travel in the United States are aware of the vital role that sidewalks play in achieving independent mobility. It would not be considered unreasonable to expect that in a city like Detroit, the sidewalks should be free from moving vehicles and would contain, under normal circumstances, a predictable number of obstacles (trees, telephone poles, parking meters, standing bicycles, etc.). In Lahore, more than three quarters of the city streets are without any sidewalks at all. The sidewalks that do exist are only occasionally safe from moving vehicles and almost never free of unexpected obstacles of all sorts.

The life style and social conditions that exist in Lahore make it perfectly acceptable for a local resident to establish his place of business in the middle of any existing sidewalk. Thus we might find, for example, a local barber squatting on a mat on the sidewalk, with his equipment and the tools of his trade surrounding him, as he shaves or cuts his customer's hair. When shopping in Lahore, we find clothing, fruits and vegetables, bicycle and automotive parts, medical supplies and treatment, brass and copper ware, shoes, carpets, bread, meat—anything that can be purchased inside local shops and stores can also be purchased outside on the sidewalks or along the sides of the street. Outdoor eating stalls are also very popular and what better location to set up tables, chairs, and benches than out on the sidewalks or along the side of the road? An added feature with these side-street eating stalls are the open cooking fires, numerous pots and pans, cauldrons of boiling tea, the inevitable pot of hot cooking oil for deep-frying *samosa* and *puri*, and, let's not forget, the immovable, unyielding customers. Not just in Lahore, but throughout most of Asia, the use of the sidewalk as either the primary

"When it is necessary to train blind people to walk on a road or street used by a wide variety of moving things, it also becomes necessary to teach them how to get out of the way quickly."

place of business or as an outdoor extension of a business in the adjoining building is a standard procedure and a socially accepted practice.

VEHICLES CROWD THE STREETS When he encounters these conditions, the pedestrian is forced to walk in the street or road. A blind pedestrian in Detroit who finds he must step into the street, for whatever reason, can expect to share his space with a known and limited variety of moving vehicles. Cars, buses, trucks, and the occasional bicycle or motorcycle constitute the normal varieties of moving traffic found in the streets of Detroit. Such is not the case in Lahore. A blind pedestrian here finds he must share his street with what to most Westerners would be an astounding variety of moving machines and animals. Cars, buses, and trucks will certainly be found, but at the same time we also find thousands of push-carts, *tongas* (a horse and carriage), bicycle rickshaws, scooter taxis, bullock carts, motor scooters and motorcycles, and an unending procession of two-wheel bicycles. To all of this, add wandering herds of water buffaloes, teams of donkeys which serve as pack animals, and free wandering cows, goats, and sheep. If these streets happen not to have the advantage of sidewalks, the sides of the street then serve the same function as the sidewalks, that of providing the local people with a site for their place of business. Finally, mention must be made of the hundreds of wandering street vendors, children who use the street as a playground, and the masses of people who simply "use" the street and not always for moving from place to place.

There is of course an omnipresent cacophony which accompanies such a scene, and this ambient sound factor is a critical one when independent mobility is being considered. The varied, strong odors are sometimes an aid to mobility but more often than not they are blended in such a fashion as to nullify their usefulness.

A question I hear from people in the United States who want to know about the mobility problems of blind people in Asia is: "How do most blind people in Asia get around?" Under circumstances such as those just described the answer must be: "It isn't easy!" In the past, many blind people did not even attempt to travel independently and, for the majority of blind people, dependency on the sighted was the accepted practice. Surprising as it may seem, practical experience over the years has shown that independent travel, with the long cane as an aid, is possible. Obviously some changes in basic travel techniques are occasionally required and certainly there must be a change in the emphasis placed on certain aspects of mobility. The important thing, however, is that it can be done.

In order to teach blind people to travel safely in a physical environment such as that just described, I found that my students had to learn to be flexible in their application of basic cane techniques. Use of the cane and the development of skill in basic cane techniques, at a level comparable to or better than acceptable standards in the United States, is the first step and of prime importance. Once the student learns basic cane technique, he then needs to evaluate and learn to recognize which travel conditions require altering these techniques. For example, in Lahore the arc often needs to be considerably wider and just as often it needs to be much narrower than the standard and relatively unvarying "shoulder" width used in Detroit. The placement of the arc cannot always be directly in front of the user and the arm position when using the cane requires tremendous flexibility. The functions of the cane, that of being a bumper and a probe, are universal, but occasionally in Asia one or the other of these functions can be eliminated. The cane also must be used to support body weight under certain circumstances. For the most part, the techniques we used most often are not new. The critical difference between the employment of cane technique in Asian countries and in the United States lies in the need for the blind person in Asia to perform, on a regular day-to-day basis, many of the skills and adaptions of cane technique that blind travelers in America employ only occasionally, if ever at all.

CHANGES IN TECHNIQUE What, then, are some of the circumstances which require altering basic cane technique? When a blind traveler finds himself on a street or sidewalk cluttered with everything from "soup to nuts," it becomes imperative that he somewhat gingerly pick his way through the maze. Swinging the cane back and forth in order to provide an arc of the usual width would almost certainly result in demolishing a colorful pyramid of oranges or, at the very least, stabbing a few choice tomatoes. While the technique of "walk slow, narrow arc, and short reach" is not new, its employment and use is more widespread in Asia than in the United States. For a blind Detroiter, attempting to travel alone through Hudson's Department Store during Christmas week would be, at the very most, an annual occurrence. The same kind of travel conditions are a daily occurrence for many blind people in Lahore.

On the other hand, if our traveler elects to move away from the street vendors by walking on the road, the hazards he finds here have already been described. To stay far enough away from the street shops and roadside vendors and at the same time not wander into the middle of the road, we found that it helps to swing the cane in an arc wider than that which is normal every third or fourth step and wide only toward whichever shoreline the traveler wants to be near. With this occasionally wider arc, it is very often possible to contact some object which gives assurance that the student is not in the middle of the road and yet not so far from the side of the road that he must change his direction in order to move toward the shoreline. This change of direction to find the shoreline is a real problem and often results in stumbling into the roadside vendors who are usually perched at irregular intervals along both sides of the road.

When it is necessary to train blind people to walk on a road or street used by a wide variety of moving things, it also becomes necessary to teach them how to get out of their way quickly. This is especially true when the only braking mechanism on the oncoming vehicle is the bit in a trotting horse's mouth. Apart from the need to explore with his cane before he moves, the blind person needs to know which way to move. Knowledge of the ground surface on either side of the body is often just as important as knowing what is directly in front. Basic cane technique as it is usually employed does not provide this information.

In this situation it is important for the blind student to keep in mind at all times the direction in which he plans to move should there be a need to sidestep quickly. At the first indication of such a need, the arc of the cane is brought quickly in toward the body, but keeping the tip in contact with the ground surface. The tip of the cane glides much more smoothly this way. Starting with the tip of the cane in a position close to the foot and sliding away from the body often results in jabbing the cane into the ground surface, especially when it is not smooth, which is almost always. This practice also takes a certain amount of time, a commodity not always available in such a situation. Occasionally it is necessary to side step to get out of the way and there is no time to explore the ground surface on the right and the left. It is usually just such a situation that results in scattered oranges and mashed tomatoes.

The Storm Drain Hazard

Kuala Lumpur, Singapore, and Bangkok have a sidewalk structure which is somewhat unique and which I found required altering the usual way in which the cane is employed. The weather in Southeast Asia includes a season of torrential rains each year. To carry off the millions of gallons of monsoon rain waters, a system of open "storm drains" has been built. Invariably these open drains, varying usually from four to ten feet deep, constitute one of the shorelines of the pedestrian "raised footpath." Every blind person knows about these storm drains and all are afraid of falling into them. The result is that blind people in these countries refuse to walk on the sidewalks. Using standard cane technique all too often places the blind person dangerously close to the edge of this deep, open drain. How often here in the United States have we seen a blind mobility student or even an accomplished traveler inadvertently step off the sidewalk curb into the street? In Detroit when this happens we are concerned about stepping off a six-inch drop. In Kuala Lumpur we are concerned with a drop of six or eight or ten feet. This is definitely not a situation for trial-and-error learning.

Early in my work in Kuala Lumpur it became apparent that it was important to attempt to get blind people out of the streets and up on to the sidewalks in spite of these open storm drains. Altering the cane technique by using a wide arc toward the side of the drain keeps the student at a safe distance from the edge of the drain. When the cane does find the drop-off, sliding the cane forward slightly as the body moves along establishes for the blind person the direction of the drain as well as his own direction in relation to it. I must also say that while employing this technique does make this kind of sidewalk travel somewhat safer, it requires more than a change in cane technique to overcome the long-standing psychological as well as actual physical fears that blind people have acquired over the years because of these storm drains. Many blind Malaysians still prefer to share the streets with moving vehicles rather than to risk the danger of falling off the sidewalk. Thus, walking in the street and "trailing" the sidewalk curb has become a common mode of cane travel for many blind people in these cities.

In every country I have seen in Asia, paddy fields for growing rice are a vital part of the life style and the physical environment of the rural areas in which a very large segment of the sighted as well as the blind population live and function. This environment presents yet another mobility problem for the blind traveler. Very often miles can be eliminated in reaching a destination by traveling through the paddy fields rather than around them. Terracing these paddy fields results in the construction of a narrow walkway, usually not more than 12 to 18 inches wide. Located on the raised mound of mud or earth separating two fields, this walkway is usually bordered by a steep drop-off into the swampy, wet, muck that the rice grows in. We were faced with the problem of deciding how the cane should be employed in order to aid the blind person in negotiating these narrow, very often slippery walkways.

In such a situation, the function of the cane as a bumper does not exist; rarely, if ever, is there an obstacle projecting above the surface of the walkway which the blind person would need to worry about bumping into. However, using the cane as a probe is essential, and so is using the cane for balance and support when the pathway is slippery. Thus, in order to employ the cane to its best advantage in a situation in which we have a narrow, winding, wet, and slippery footpath to negotiate, we employed a technique of gripping the cane firmly with the fist at any level along the shaft that feels comfortable. With the cane in a position nearly perpendicular to the ground surface, the area is explored with what can best be described (perhaps not too accurately) as a jabbing or stabbing movement. Once it has been determined where the foot will be placed for the next step, a firm spot is found in which to anchor the tip of the cane so that it can be used for body support, for steadying a not too firm foot grip, and for avoiding slipping into the water-filled terraces on either side of the path. On those occasions when slippery footing is not a problem, the cane can be used in a standard cross-body technique, with the tip or lower portion of the shaft of the cane being used to trail one side of the raised mound of earth that serves as the footpath.

Examples of Individual Adaptions

Many blind persons who reside in rural areas in Asia have solved their mobility problems without the advantage of a formal training program or a scientifically designed mobility aid. The mobility aid most often used by untrained blind persons in rural situations is the bamboo pole. The length of this pole can range from three to seven feet, depending upon the individual, his preference, and his own evaluation of what he needs to do with it in order to protect himself.

On one occasion I watched a pair of blind men use bamboo poles to measure the width of a running stream of water, jab the pole into the middle of the stream and check for a firm grip in the bed of the stream, and finally vault across using the bamboo poles to steady their leap over the water. Using our conventional fiberglass or aluminum canes, these men would have had to wade into knee- or thigh-deep water in order to get to and from their work in the fields.

I also had occasion to observe a villager making what at first appeared to be a rather unorthodox, but certainly interesting, use of a seven-foot bamboo pole as a mobility aid. The blind farmer's technique consisted of gripping the pole in the middle of the shaft and holding his arm straight out in front of his body. This puts his arm in a position parallel and the pole perpendicular to the ground. By rotat-

> **"As I analyzed this man's mobility needs, I found that the environment he was required to function in did not necessitate his using a cane to explore the surface of the ground on which he walked."**

ing his wrist slowly to the left and right, an arc was made at both ends of the pole. The lower end of the pole cleared the path for the lower portion of his body while the upper end of the bamboo pole protected his face and the load he carried on top of his head.

As I analyzed this man's mobility needs, I found that the environment he was required to function in did not necessitate his using a cane to explore the surface of the ground on which he walked. For hundreds of years, bare-foot farmers have walked these trails. From his village to all the surrounding fields and to all the neighboring villages, the trails are smooth, hard-packed earth with shorelines of intermittent grass, shrubs, bushes, and trees. This blind farmer was far more concerned about the animals that wandered at will along these paths and, even more, about the many overhanging tree branches and vines that might dislodge his precariously balanced bundle. Not having to explore the ground surface eliminated the need to "tap" the pole on the ground. As I watched this man travel, I became convinced that what he was doing met his needs, unconventional though it was. I knew better than to suggest that he try a shorter bamboo pole used in a conventional way. Standard cane technique would not meet his needs. Obviously protecting and keeping the load he carried balanced on his head was more important than tactile exploration of the ground surface. To that end, his technique and the bamboo pole did the job. It also explained why a seven-foot pole was needed.

These examples of travel in rural areas in Asia illustrate one situation in which the cane is not needed as a bumper, another in which it is not needed as a probe, and a third in which it was used to support the weight of the body. In all three situations, none of which are uncommon in Asia, the cane was employed by blind people in a way which most mobility instructors in the United States would probably never see. Orientation and mobility in paddy fields and farm lands show how environmental conditions and the needs of the traveler can alter the way and manner in which a mobility aid is used to best serve the blind person.

ROLE OF THE OTHER SENSES

Using the remaining senses to interpret the environment is as important in Asian countries as it is in the United States. The perception and use of orientation clues, tactile, olfactory, and auditory input, and kinesthetic and position awareness, are all a vital part of mobility skills regardless of what physical characteristics the environment happens to assume. The many differences in the application of these skills which exist in these two parts of the world are the result of differences in the variety and quantity of sensory input available to the blind pedestrian, as well as in the importance that one or another aspect of the human sensorium may have for an individual as he moves about.

Having already described a few of the environmental differences between a street scene in Lahore, Pakistan, and Detroit, Michigan, I can now briefly mention a few of the differences in the sensory input a blind pedestrian receives as he walks along the street of these cities. Mention must be made again of the tremendous influence and impact on mobility skills which result from the absence of pedestrian sidewalks in the urban setting. The role played by sensory awareness takes on a new dimension and importance throughout all of Asia because of the prevalence of this condition in large sections of many Asian cities.

The Tactile Sense

Reduced to a few basic aspects and expressed in the most general terms possible, the blind pedestrian walking along Woodward Avenue in Detroit would use his sense of touch to interpret surface texture and to identify objects he encounters in his line of travel. His sense of touch would also be used to influence kinesthetic decisions by revealing a need to stop, change direction, side step, etc., when he touches an object, sidewalk curb, or building line. Tactile identification of a sidewalk curb running in a direction perpendicular to his line of travel warns of the border or edge of an intersecting street. Many direction changes are made in accordance with the tactual interpretation of this kind of environmental information.

The same blind man, walking through Kashmiri Bazar, between Delhi Gate and Shahalam Gate in Lahore, would also use his sense of touch to interpret surface texture and to identify objects. An important difference is that in Detroit one could expect a somewhat uniform sidewalk construction of concrete (or some other material), while in Kashmiri Bazar the surface texture is likely to change every few yards. Thus, there is the need to identify a greater number of different surface textures as well as to make decisions about how these differences should influence the pedestrian's line or direction of travel. Concrete road surfaces are found in Lahore, but so are black tar, stone slab, packed earth, and even cow dung surfaces, with no regard for continuity or uniform placement in the overall structure of the surface of the road.

The same condition also exists with regard to tactile identification of objects. There are simply many more objects that the blind pedestrian is likely to encounter both on the sidewalks and in the streets of Lahore. I cannot even begin to imagine a blind pedestrian walking down Woodward Avenue needing to use his mobility aid to avoid walking into or stepping on a sleeping cow, a parked horse and carriage, a peanut vendor, a squatting man getting a hair cut, stacked bolts of cloth, a cauldron of boiling tea, a display of tomatoes, a heap of cow dung, a live goat foraging for food, or a slaughtered one being cut up for the evening dinner.

Specifically, it is the use of tactile information as the basis for making both orientation and kinesthetic decisions which is important. In Kashmiri Bazar there are no sidewalk curbs to "feel" and thus assist in establishing a line of direction. There is no perpendicular curb to touch and be warned of the edge of an intersecting street. Tactually following the curb (when there is one) or a building line is not possible most of the time because of the streetside vendors, shops that overflow onto the street, and the vast array of objects placed at irregular intervals along the sides of the street. The wealth of tactile information provided by most sidewalks is just not available to many of Asia's blind travelers. As a result, some important mobility decisions which are usually made on the basis of such information cannot be made by the blind pedestrian in Lahore, even though as part of his travel he will encounter many more objects and surface textures than the blind Detroiter.

The Use of Hearing

The remaining sense which is used by a blind person to expand his environment beyond the reach of his hand (and cane) in his sense of hearing. As such, hearing is an integral part of independent mobility anywhere in the world. Just as with cane technique and the use of the sense of touch, the role of auditory perception changes as the environment changes.

One difference in the use of sound which I do think needs to be mentioned at this point is the relationship between listening and personal safety. When a blind pedestrian must share the same ground surface on which he is walking with a variety of moving vehicles, the role of auditory awareness increases in importance. This is true whether we compare travel conditions in Lahore and Detroit, London and Bombay, Tokyo and Rio de Janeiro, or two sections of the same city anywhere in the world. About the only time the blind pedestrian is forced to share common ground surface with moving vehicular traffic in most developed western cities is when crossing streets and driveways. In Lahore, as well as many other Asian cities, most blind pedestrians do a large part of their walking on ground surfaces used only by moving vehicles. Listening, for safety reasons, is critical for a greater part of each walking hour in Lahore than it would be for a comparable amount of foot-travel time in Detroit.

Sounds and Safety

As he walks along the sidewalk in Detroit, a blind pedestrian uses the sounds he hears in the street primarily for orientation purposes, since he knows that if he stays on the sidewalk he is safe from this traffic. Traffic sound becomes a safety factor only when he reaches a street intersection and must cross the street. What sound he does hear is almost always the sound of cars, buses, and trucks and there are certainly many more of this kind of vehicle to worry about in Detroit than there are in Lahore. The critical differences here are not in terms of numbers of vehicles, but rather in the kinds of vehicles, the rate of speed at which these vehicles move, and, most crucial, the level of auditory output being produced by the moving vehicles.

The many different kinds of street traffic one finds in Lahore have already been described. The safety requirement inherent to the blind pedestrian in being able to identify, localize, and determine the speed and direction of a trotting horse and carriage, for example, as it approaches, and ultimately his ability to make a decision about which way, how far, or even if it is necessary to move to get out of the way. Bullock carts, tongas, scooter taxis, motorcycles, not to mention a plodding herd of water buffalo or a team of donkeys, all produce different sounds as they move along the road and, more important, all have very different levels of auditory output; and each of them must be accounted for when we think about independent travel in Lahore. Finally, when we take away the protection and safety which the pedestrian sidewalk offers in Detroit, the ability to perceive and accurately interpret this wide range of environmental sound is what most blind travelers on foot in Lahore depend upon for their safety.

THE DANGER OF BICYCLES

In most Asian countries (Japan and Singapore being the most notable exceptions), the number of bicycles on the roads almost always exceeds the number of cars. A moving bicycle without a bell or some other sounding device is always a problem and is the nemesis of blind pedestrians everywhere in the world. Unannounced bicycles rarely, if ever, produce enough sound to warn of their approach. The combination of a blind pedestrian who does not hear an approaching bicycle and the sighted cyclist who does not recognize the cane and what it represents has produced some very interesting action on the streets of Asia. This problem is not unique to Asia; it is just more prevalent there. To illustrate the problem, the four students who participated in the first training course for instructors that we held in Lahore managed to have seven of our supply of 12 imported white fiberglass canes shattered by passing cyclists after only eight or nine hours of practice on street crossings in a relatively quiet section of the city. There were also of course seven bicycles and riders sprawled out on the street. The loss of these irreplaceable canes was a small price to pay for an opportunity to have the crowd that always gathered learn a lesson about the use of the white cane, a lesson I know at least seven cyclists in Lahore will never forget and a lesson we learned about the effect of bicycles on fiberglass.

Finally, there is a condition which adds to the complexity of independent travel in Asia, while at the same time being the most important single factor in making foot travel feasible for the blind pedestrian. Without assistance from the ever-present sighted pedestrian, independent mobility could be next to impossible for many blind persons. The instinct to protect in a time of danger is spontaneous and natural. It is not necessary for the sighted public to know or recognize the outward or visible signs that the pedestrian is blind. A shout of warning and a push or shove to get a fellow man out of the path of danger transcends the need to be aware of any physical limitations which the endangered pedestrian may possess. As the travel conditions become more complex, the great hordes of people who are responsible for making the environment more complicated are also responsible for providing the sense of security needed by the blind pedestrian in order to attempt to travel in places like Kashmiri Bazar.

INTRODUCTION OF NEW TECHNIQUES

In conclusion, there is a need to emphasize that in bringing an idea such as independent mobility to countries where it is relatively unknown, introducing all the basic considerations and proven techniques is only the first step. There is a tremendous need in Asia for the introduction of new and proven techniques; equally as great is the need to give the people in these countries an opportunity to work with, evaluate, adapt, and, if necessary, change our proven techniques and methods to meet their own needs and requirements. Mobility as we see it being performed by blind people in most places in the United States would be quite limiting to people in many parts of Asia without there being some degree of adaptability and flexibility. As more and more blind people in Asian countries begin to move out and explore their environment, we will begin to learn more and more about their need to change or adapt the techniques and methods which we have introduced.

Visual Substitution Systems: Control and Information Processing Considerations

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Abstract: *A detailed discussion of the visual mechanisms found in the higher vertebrates is used as the basis for exploring the problems found in creating visual substitution systems. Specific attention is given to the control mechanisms used in the visual system and to the processing of visual information in the retina and brain. The three types of substitution systems discussed are tactual display systems, audio display systems, and those involving direct stimulation of the brain using electrodes.*

▪ In this age when men walk on the moon and computers solve mathematical problems in billionths of a second, one may wonder why no one can build an artifical eye for the blind. Satellites can recognize particular stars in space, and rockets can recognize and track targets on the ground or in the air. Why, then, can't someone build a device which would allow a blind person to see a keyhole in a door?

In this paper some seldom appreciated features of vision are examined. After reviewing these features, one should understand more clearly why no one has succeeded in making an artificial eye which is anywhere near as effective as that provided to most of us by nature. At the same time, one's appreciation of the useful sensory aids which have been developed should be enhanced.

THE VISUAL SYSTEM The visual system performs a number of functions which are difficult to replace with machines. For example, the visual system is able to recognize complex patterns and it can seek out important aspects of a vast scene and fixate on several of these per second.

To derive useful information so quickly from a scene, many parallel communication channels connect each eye and the brain. The eyes are able to find important areas of a visual scene in part because of a large area of peripheral vision which is especially sensitive to contrast and movement. When these kinds of stimuli are found, the eye makes quick movements to examine them one at a time. The eye can fix on particular objects in the scene even though the object or the observer (or both) might be moving. Also, the eye automatically focuses and adjusts itself to handle light intensities which may differ by a factor of 100,000:1.

In this paper we will analyze some aspects of human and animal visual systems. In this way, it is hoped, we can more clearly define the ideal characteristics of an artificial system which would be capable of replacing the eye. In the future, advanced thinking and technology may make possible a sensory aid which will incorporate some of the features described here.

Reading, Mobility, and Object Recognition

The problems of enabling a blind person to read is, in a sense, much simpler than the problems of mobility and object recognition. In reading, there are fewer than 100 different synbols (letters, numbers, and punctuation marks) and combinations of these that need to be recognized. And this can be done quite effectively with such reading aids as the Optacon and the Visotoner.

Tasks more difficult than reading include recognizing a seemingly infinite variety of objects and shapes and locating objects or patterns in a complex environment. Even the most modern computers are surprisingly unsuccessful when it comes to recognizing faces, reading different handwriting styles, and understanding complex three-dimensional relationships that are portrayed two-dimensionally. Probably, the function of an ideal sensory aid would not be to recognize a face or to analyze a picture, but simply to make the features of the face or picture known to the subject's brain in such a way that the brain could quickly carry out the pattern recognition.

Superimposed on this information-acquiring ability of the ideal sensory aid is the necessity of acquiring and holding a picture still long enough for analysis. This implies either taking a succession of still pictures or tracking the target of interest. Analysis of the image must be done quickly enough that the eye may continue tracking the target or be directed to a new target.

Analysis of pictorial information is carried out by both the eye and the brain. An ideal sensory aid might pick out important features in a picture and transmit only these to the brain. This might enable more useful information to reach the brain in a shorter time.

IMAGE PROCESSING

Contrast is important in interpreting pictures. Line drawings convey much information and are readily understood even though they may contain relatively few lines. Sharp angles which are formed by lines are also considered to be quite important in pattern recognition (Noton & Stark, 1971). Experiments in lower animals have shown that a significant amount of image processing can occur in the retina. Experiments (e.g., Lettvin, et al., 1959) have shown that each optic nerve fiber in the frog can be grouped into one of five categories, defined in terms of stimulus characteristics (Thompson, 1967):

1. *Sustained edge detectors.* The effective stimulus is an edge of an object lighter or darker than the background moved into the receptive field of the cell and kept there. These cells appear to fire as long as the edge is there. General changes in illumination do not activate the cells.
2. *Convex edge detectors.* These cells respond most when a small dark object with sharp (i.e., contrasting) edges is moved into the receptive field and moved about within the field. They do not respond to general changes in illumination. The authors refer to these cells as "bug perceivers."
3. *Changing contrast detectors.* These units respond best to sharp dark or light edges moving in particular directions across the visual field.
4. *Dimming detectors.* These cells respond to a darkening of their receptive fields, and correspond to Hartline's "off" fibers. They may respond for a period of many seconds after illumination is dimmed, but respond maximally when the dimming occurs.
5. *Dark detectors.* These cells fire continuously with a discharge frequency inversely proportional to light intensity.

Edge detection thus seems to be as important in the visual perception of frogs as it is in humans.

TWO KINDS OF VISUAL SYSTEMS

Actually, there are two principal types of visual systems in higher animals (Michael, 1969). The first type has a relatively large amount of information processing carried out in the retina. Ganglion cells, those cells which connect the retina to the brain, are highly specialized in terms of what will cause them to transmit a signal. Quite fundamental image components such as edges, color, contrast, orientation, and directional movement cause these cells to fire. This type of visual system is found in frogs, rabbits, ground squirrels, and pigeons.

The second type of visual system puts much more of the burden of analysis on the higher brain centers. Edge detection, orientation, and directional selectivity are the responsibility of the visual cortex rather than the retina. This type of visual system is found in cats, monkeys, and man.

To reduce the amount of information which has to be communicated to the brain, one might imitate animals with the first type of visual system. Thus, a practical sensory aid might use image preprocessing, such as edge detection, to help the user extract the most important information from the display.

When looking at a picture, one does not look at the entire picture at once if it is at all complex or large. Instead, one looks from place to place on the picture. It has been found (Noton & Stark, 1971) that every person has a characteristic way of looking at an object that is familiar to him. For each object he has a preferred path that his eyes tend to follow when he inspects or recognizes the object.

Detailed Vision

Detailed vision comes about only when an image is focused on a part of the retina called the fovea centralis. The human fovea accounts for the central two degrees of vision and is comprised of approximately 34,000 light receptor cone cells in an array about 200 cells across (Ruch & Fulton, 1960). The entire human optic nerve contains 1.2 million individual nerve fibers (Potts, 1972). A larger region of peripheral vision surrounds the region of detailed vision. Normally, the visual field for the eye extends 50 degrees upward, 80 degrees downward, 60 degrees nasally, and more than 90 degrees temporally. The field is most extensive for a white target and smaller for colored objects. The size of the visual field for colored objects is a function of the brightness of the object (Johnson, 1966).

EYE MOVEMENTS AND FOCUSING

To see an object or part of a large scene with good visual acuity, the eyes must be moved so that the image of interest falls on the fovea centralis. This area is about 1.5 millimeters in diameter and is the only part of the retina with a sufficiently high density of photoreceptors to provide detailed vision. Only about a thousandth of the entire visual field can be seen clearly at any given moment. The two degrees of solid angle in which vision is most acute is about the size of a dime held at arm's length (Thomas, 1968).

The ability to see a landscape clearly, for example, is dependent on the ability of the visual system to flick rapidly about the scene. The ability to perceive detailed features of a walking person or a moving automobile depends on the visual system's ability to acquire a target and track it so that the proper image remains on the fovea.

A description of the eye movement control system is useful, because this system is so vital to normal vision. This system eliminates the need to see everything all at once with detailed vision. That reduces the amount of information which must be transferred to the brain in a given time period. Instead of seeing all parts of a large picture simultaneously, our gaze jumps around from place to place in the picture before us. A seemingly unlimited memory for pictures and parts of pictures and an ability to compare images in memory with the present ones make this jumping around quite effective (Haber, 1970). Analyzing quantitatively how the eye movement control system works is thus a prerequisite for estimating the requirements of an artificial system which might replace the eye.

Visual Subsystems

The visual system may be divided into six somewhat separate sub-systems for the purpose of analyzing how proper images are placed and maintained on the retina: 1) The saccadic system moves the eye from one position to another very rapidly. 2) The smooth pursuit system will follow a moving of the head in space and moves the eyes in a compensatory way to stabilize the visual axis in the environment. 4) The vergence (or convergence) system moves the eyes so that both will be focused on the same object, regardless of its distance from the head. These four-eye-movement, or oculomotor, systems are complemented by systems which 5) focus the image on the retina and 6) keep the amount of light falling on the retina relatively constant despite large changes in ambient lighting.

Most eye movements are combinations of the movements produced by each of the four oculomotor systems. The tasks of

"To approximate normal vision, the central area of detailed vision provided by our artificial eye would have to carry information about a picture with roughly 34,000 points of resolution so that features in a real environment could be recognized."

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the four systems are distinct and appear to be performed by separate neurological control systems. The outputs of the four systems converge on the motor nuclei and are relayed to the extraocular muscles (Robinson, 1968). Each eye is equipped with three pairs of antagonist muscles that rotate the globe in three roughly perpendicular directions: horizontal, vertical, and rotational. Complex, well-directed combinations of these three basic movements characterize normal vision.

The Saccade

The saccade is the rapid jump the eye makes as it moves from fixating on one point to fixating on another. Saccades are used in reading and for examining objects or pictures. The extraocular muscles are among the fastest in the body, and their fastest movements are the saccades (Robinson, 1968). A ten-degree saccade lasts about 45 milliseconds (msec) and the eye velocity reaches a peak of about 400 degrees per second (deg/sec). During a saccade, the agonist muscle contracts almost maximally and the antagonist is inhibited completely. The saccadic system seems to operate like a sampled data system (Robinson, 1968). If a target steps to one side and then steps back to its original position after 100 msec, the eye responds by making a saccade at 200 msec, despite the fact that this movement is, at the time, inappropriate and takes the eye away from the target. The eye then requires an additional 200 msec before it can return to the target.

A saccade is made when the eye must move to place an image on the retina in the proper location. A saccade will not always be made if the retinal image error (distance which must be moved) is small. By presenting different visual stimuli to subjects, the factors were found which determine whether or not a saccade will be made, and how large the saccade will be. The decision to make a saccade and the decision as to how large it should be depend on the retinal image error and its rate of change (Robinson, 1965).

SMOOTH PURSUIT SYSTEM The smooth pursuit eye-movement system can respond to two target motions spaced 130 msec apart. It is therefore sometimes considered to be a continuous rather than a sampled data system. Smooth pursuit eye movements follow a target and cannot be voluntarily made in the absence of a moving visual stimulus. Sleeping monkeys, however, have been found to make tracking eye movements similar to smooth pursuit movements (Fuchs & Ron, 1968). Dreams might therefore provide a moving visual stimulus. The eye commences smooth pursuit movements in response to target velocity even though the center of gaze may be some distance away from the target position at the time. The smooth pursuit system is primarily responsive to target velocity and not to target position (Robinson, 1965).

Smooth pursuit and saccadic movements may occur with complete temporal independence. Smooth movements may occur just before, after, or with saccades. If they do occur at the same time, nonlinear interaction occurs, and there are discrete changes in the otherwise smooth pursuit velocity.

The vestibular eye-movement system obtains information about head orientation from the semicircular canals lying in the vestibule of the inner ear. These sense organs behave like an integrating accelerometer with a frequency response of 0.017 to 17 Hz. The vestibular system can compensate for head movements on the order of 300 deg/sec. The smooth pursuit system, in comparison, can accurately compensate only for retinal image movements caused by head movements of less than 30 deg/sec (Robinson, 1968).

The vergence system is the slowest oculomotor system and is the only one which moves the eyes in opposite directions. Vergence movements may last for 800 msec as opposed to (a minimum of) 45 msec for the ten-degree saccadic movement. The stimulus for the vergence system is the difference between the retinal errors seen by each eye (Robinson, 1968).

Depth Perception

Depth perception requires that the images of an object be formed on corresponding areas of the retina in each eye. The image must also be sharply focused. Since the distance between the lens and the retina is fixed, focusing is achieved by changing the thickness, and therefore the focal length, of the lens. The focus mechanism continually changes the focal length of the lens in the eye. Depending on the distance to the object being viewed, a change in one direction will improve the focus, and a change in the other will degrade it. Information derived from the resulting retinal image is thought to be used to steer the focusing mechanism in the direction of the sharpest focus. Information from this focusing system is used to control the vergence system (Fender, 1964). One might expect the vergence system to act as a range finder for the focus mechanism, but this is not the case.

While only a small area of detail can be seen at any given time with normal vision, several areas per second can be seen. By means of peripheral vision, what is around those areas can also be seen, though not so clearly. If there is anything of importance outside the area of sharpest vision, the eye is attracted to it, especially moving objects and edges.

Light Adaptation

The amount of light striking the retina is controlled by two mechanisms. The first of these is pupil size which is influenced by the level of ambient light, by attention, and by emotion (Hess, 1965) and which can change in about a second. This change alters the amount of light reaching the retina by a factor of 50. Further, light adaptation occurs because of changes in the sensitivity of the rod and cone cells of the eye, changes which take a number of minutes to occur. Because of these changes, the eye is able to adapt to light intensities which differ by a factor of 100,000:1 (Newell & Ernest, 1974).

Informing the brain of objects in the environment involves complex pattern recognition, comparing images with those stored in memory, rapid (and slow) eye movements, focusing, adjusting to light intensities, and other processes. When attempting to replace a lost biological function, one can either copy nature's method or think of a better, or at least more technically realizable, way. The latter has been the preferred course in the special case of reading aids.

THE IDEAL SENSORY AID

Completely replacing the eyes with hardware seems, today at least, to be impossible. While television cameras can detect all that normal eyes can, the information cannot be effectively transmitted to the brain. Nevertheless, it is interesting to speculate on how the artificial eye of the future might work. To copy nature, our artificial eye might preprocess the image in various ways. The artificial method of seeing should also allow the user to quickly change the direction in which he is looking. Quick analysis of image content and rapid selection of new images, one after another, are basic characteristics of the human visual system.

The ideal sensory aid might have a central area of fine visual discrimination and a large area of less detailed peripheral vision. This would not tax the bandwidth limitations of the eye-to-brain communication system as much as a peripheral area with detailed pattern discrimination ability. Thus, it may be practical to provide only a small visual area of very sharp detail if it can be moved around quickly.

The visual image, or preprocessed information about it, would have to be relayed to the subject's brain in not much more than 130 msec in order to permit the serial selection of new scenes and to follow moving objects such as automobiles. As mentioned above, the smooth pursuit eye-motor system does respond to target motions this quickly.

34,000-Point Central Area

To approximate normal vision, the central area of detailed vision provided by our ideal artificial eye would have to carry information about a picture with roughly 34,000 points of resolution so that features in a real environment could be recognized. This is approximately the number of light receptor cells in the fovea centralis. Most of these cells seem to have their own nerve fibers. Recognition of color and various shades of gray are additional functions that it is hoped the artificial visual system would perform. Peripheral vision provided by our artificial eye would be in addition to the 34,000-point central area of detailed vision.

To date, three types of systems—all only partially developed—aim at transmitting pictures to a blind person's brain. The first of these uses several hundred stimulators (mechanical or electrical) in an array on the skin. These systems are described by Bach-y-Rita (1967, 1969, 1970a, 1970b), Bliss (1970a, 1970b), Collins (1970, 1971a, 1971b), Scadden (1969), and White (1970). The second type of system uses an audio display. It codes a two-dimensional pattern of dots in a picture. The vertical position of each dot is coded by frequency, while the horizontal position is coded by the ratio of sound intensities presented to each ear (Fish, 1973). Both of these systems use television cameras to scan the environment and thus display composite pictures to subjects. The third system of picture presentation involves stimulating the brain directly with electrodes. This is in contrast to the first two systems which make use of other sensory pathways to the brain. So far, not enough electrodes have been implanted in a subject to produce pictures as meaningful as those which have been presented with the tactile and auditory systems (Sterling et al., 1971).

Tactile and Auditory Displays

The tactile and auditory displays have enabled blind subjects to point a television camera at certain simple objects in a plain background and identify them. Each system has enabled subjects to walk about in an artificially simple environment, avoiding obstacles and finding desired objects. In both systems, however, the images conveyed effectively to subjects have been of less than 500 points. The object or pattern recognition times have been on the order of four seconds. The images recognized have been quite simple compared to most visual images encountered in a real environment.

The degree of resolution (number of points) and the picture recognition times of the auditory and tactile vision substitution systems are the critical parameters. These define how much information can reach the brain in a given time. Although the tactile and auditory systems are capable of providing useful information to a blind person, they fall far short of being able to duplicate the function of an eye. The tactile and auditory systems cannot allow any real analysis of visual images such as a tree with birds in it, a room full of tables and chairs, or a moving automobile.

STIMULATING THE BRAIN DIRECTLY

Direct stimulation of the brain deserves additional comment, even though lack of data prevents a detailed analysis of the performance which can be expected. It is possible to transmit signals directly into the optic nerve or visual cortex to produce the sensation of light (Brindley & Lewin, 1968; Sterling & Vaughan, 1971). The visual cortex (or the retina, if it is intact) provides a more spread-out area on which to apply electrodes than does the optic nerve. It would appear that making working connections to at least 34,000 nerve cells (or groups of cells) might be necessary to achieve our ideal sensory aid. Vaughan and Schimmel (1971) estimate that electrodes could be spaced at 0.5-millimeter intervals on the visual cortex. This would allow a prosthetic device to make use of 4,000 electrodes.

Microelectrodes capable of being inserted into and stimulating single cells in the brain are used in research, but they are displaced by the slightest movement. These intracellular electrodes also always kill the cell they have penetrated within a few hours.

Assuming that the electrode-neuron interface problem and other problems associated with this method of making a sensory aid are solved, it may one day be possible to fabricate miniature arrays of extracellular electrodes using integrated circuit technology. A large number of electrodes with their driving circuits might be placed on a single piece of implantable substrate. Power could be coupled through the skin inductively. (Some cardiac pacemakers, for example, have their batteries recharged in this manner.) Signals to be applied to each electrode could be coupled to the implant from a TV camera, again without breaking the skin wires. One radio frequency channel could contain information for all the electrodes by multiplexing the information. (This is the technique used to allow one telephone wire or one undersea cable to carry many voices simultaneously.) The problem of having thousands of wires going from a TV camera to the implant would thus be eliminated.

While the electronic details of such a system can be worked out, other aspects of the system are not so easily handled. How closely even tiny electrodes can be placed without having their signals completely confused and mixed is a major question. How quickly patterns from a large number of electrodes can be understood may not have a simple relationship to how quickly subjects see phosphenes, or dots of light, when a single electrode stimulates the visual cortex. The reaction of tissue to foreign material (and vice versa), infection, the need for neurosurgery, cost, movement of the electrodes relative to the tissue, and the fact that phosphenes seem to move when a subject's eyes move, are formidable problems.

Visual Substitution Systems

Lastly, the prospect of a purely biological approach to the problem of providing an artificial eye should be discussed. Some lower animals are capable of growing connections to their eyes after the optic nerve has been cut (Jacobson & Hunt, 1973). In fact, some lower animals can regenerate the neural retina, optic nerve, lens, and iris (Stone, 1959). Perhaps the only way to obtain a reasonable facsimile of a normal eye will be to grow a new one, or to grow connections to a transplanted one. Advances in genetics, embryology, and immunology may one day make this possible.

Becker (1972a, 1972b) has caused the partial regeneration of amputated limbs in rats using electric currents. "Bone cartilage, bone marrow, muscle, nerve, and blood vessels all were regenerated. While a complete extremity was not formed in any case, the amount and organizational pattern of the units formed far exceeded any growth naturally seen or previously obtained by any technique." It is thought that the current causes some cells to redifferentiate into more primitive cells. These then grow in a manner similar to the way cells grow in a developing embryo.

It is difficult to see how Becker's work might be applied to the eye. There are relatively large, steady, and transient voltages and currents already present in the eye. These biologically produced voltage and current levels, might be tried in the eye. The complex structure of the neural retina and other parts of the eye make it difficult to believe that growth of the eye might ever be made to happen except in the properly structured embryo, as it normally does before birth.

CONCLUSIONS We have examined some functions of human and animal visual systems in order to define qualitatively and quantitatively some of the characteristics of an ideal sensory aid. The ideal visual substitution system may never be developed. Defining the characteristics of such a system will, it is hoped, be useful to designers of sensory aids when they are planning and evaluating their inventions.

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Driver's Training for Partially Sighted Persons: An Interdisciplinary Approach

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Abstract: *Through a program involving optometric and special education professionals, partially sighted persons can be trained to use bioptic telescopes for driving. Special performance tests, given by informed officers of the Department of Motor Vehicles, insure that a safe and dependable driver will be placed on our highways.*

▪ There are some 1,000,000 physically handicapped drivers on our American highways today (*Medical News*, 1971). These people enjoy safe and pleasurable driving experiences because of the training made available to them through special education programs for driver's training. Special equipment and techniques are utilized to enable the physically handicapped to gain complete control over their car (Hofkosh, Sitajlo, & Brody, 1969; Match & Miller, 1969; Alabama State Department of Education, 1973).

The visually handicapped have not been included in these programs of special training. It was not until 1969 that any type of visual aid for driving was seriously considered and utilized (Korb, 1970). Telescopic lenses were used to enable the partially sighted to drive an automobile and realize central visual acuities of 20/40 or better. A good deal of controversy still exists about the validity of driving with these telescopic lenses (Keeney, 1974).

VISION AND DRIVING

The driving task is so complicated that the importance of specific visual tasks in driving is difficult to define. It is known that vision is vitally important to driving, but precisely which factors should be used to determine driving ability is almost impossible to determine in a controlled study (Keeney, 1964, ch. 5). This lack of valid data on vision and driving makes it difficult to evaluate the use of telescopes for the partially sighted driver. Studies will have to be directed to total performance. As with the physically handicapped, it will be found that some individuals will function well with the aids and others will fail miserably. Our efforts must be directed at finding ways to define these two groups before they are set free on our highways. The authors are here presenting one such suggestion for an evaluation program.

The use of an automobile must be tremendously important to the partially sighted because, in spite of the tightening of the vision requirements, licensed legally blind drivers can be found in almost every state. People will resort to all sorts of devious tactics to obtain a valid driver's license. In case it is not obvious why they go to all this effort, consider the drastic changes in your life style if you were suddenly told that you would not be able to use your automobile. Our society has made us very dependent upon the car.

The ability to drive is as important to the partially sighted individual as it is to you. They are denied the privilege of driving and must depend on others to provide the transportation needed for their social interactions and economic needs. Most communities have limited bus transportation, especially in suburban communities. Taxis are far too expensive to use for daily transportation. (In addition, many blind persons are agency-supported, hold low paying jobs, or are retired.) It is so difficult for the partially sighted to get out of the house for simple tasks like shopping or visiting that there is a tendency for them to stay at home and vegetate or become television addicts. Their social lives are drastically curtailed by the lack of easy access to transportation.

It is difficult for handicapped persons to convince employers that they are capable of handling a meaningful job. When you add to that the burden of having to live close to the job because of a lack of transportation, the employment opportunities available to the partially sighted individual are significantly reduced. The use of the automobile broadens the job market for the individual concerned. He is not dependent on bus schedules or the location of residen-

> **". . . even though the telescope provides 20/40 or better acuity, it is used only a minimum amount of the driving time for locating and recognizing highway signs, objects, and other needed information. . . ."**

tial areas in order to change jobs as his skills develop and his interests change. The individual can compete in the employment market and does not have to feel trapped in his present job because of the lack of transportation. The effect an automobile has on one's ability to compete successfully for better jobs is substantial.

For the congenitally blind male youth, the automobile holds a special significance. In our society a great emphasis is placed on the acquisition of the "first car" as the transition from youth to adulthood (Mehr, Mehr, & Ault, 1970). The inability to drive is often interpreted by the partially sighted youth as a failure to reach manhood. This puts a severe stress on his already overburdened self-concept. His society emphasizes physically beautiful people and independence through work and the partially sighted youth has a difficult time handling these demands. This is evident to some extent in the fact that 19 of the 20 youths in Dr. Korb's (1970) program were male.

It is not hard to realize the importance of driving to the partially sighted population. Driving can be the key to their social, psychological, and economic security. The question that now arises is how to provide this security without jeopardizing the welfare of other drivers on our highways (Allen, 1970, ch. 7).

VISUAL ACUITY REQUIRED Of the partially sighted population (central visual acuity of 20/70 to 20/200), more than half are eliminated from driving because of the experimental nature of the proposed program and the lack of technology specific to the use of telescopic aids for driving. If we are to meet the 20/40 criteria of most state licensing bureaus and if we realize that a 3.0X telescope is the maximum practical magnification that can be used for driving purposes (based on present experiences, but open to question), an acuity with best conventional correction of 20/120 or better will be needed in order to qualify the patient for licensing procedures. In addition to these requirements, a full visual field of 140 degrees is needed in the non-telescopic portion of the telescopic aid. A full view is as vitally important for driving skills as is good central acuity (Kelleher & Mehr, 1971).

Binocular vision is another area of concern. At present only persons enjoying similar vision in both eyes are being considered for most programs. While this is an advisable precaution, it has not been proven that monocular drivers are a greater risk on the highway than binocular drivers. In addition, many of our potential "monocular" drivers do have some vision in the opposite eye. Typically this is enough vision to detect motion and serve as a warning or alert mechanism for the visual system. While not ideal, some peripheral vision on one side is better than the absence of side vision which exists in some of our presently licensed monocular drivers.

The arguments regarding qualifications for the program will continue to be emotional and opinionated until further research in the area of vision requirements for driving is done. Solid, competent research in this field may open up whole new dimensions in state regulations, technology, and training programs. This, in conjunction with on-the-road experience, will allow more people to be licensed. However, it may also dictate the tightening of our vision requirements based on sound data instead of arbitrary criteria set by bureaucracy.

THREE-PART PROGRAM A unique three-part program of evaluation and training is recommended for determining an individual's qualifications to become a licensed driver. This program entails the evaluation by a low vision specialist of the patient's vision performance with a telescopic system, an instruction program from a driver's training instructor in special education, and a comprehensive road performance test by the appropriate state department. Through the utilization of the expertise of these three professionals, a greater confidence in the partially sighted individual's ability to function safely and competently on our highways can be realized.

The person enters the program with a complete low vision evaluation. A variety of state agencies, public information programs, or other health professionals may refer the person for this care. If the examination reveals that the patient can obtain 20/40 acuities (preferably with 2.2× wide-angle biotic telescope), has relatively equal acuities and at least gross binocularity, has visual fields of 140 degrees or more, and has some driving experience, an appropriate telescope will be presented on a loaner basis. (Quite often, large refractive errors make this impossible.) With a loaner telescope the patient is taught to work with locating objects, developing some depth perception and wearing the unit comfortably, and to use it effectively.

The Special Education Instructor

The patient is then sent to the special education instructor for a preliminary evaluation of driving skills, highway knowledge, and reflex times. Specifically, the patient is asked to perform on a simulated driving test. This test provides the instructor with a totally new set of visual acuities (a check on any biases of the low vision specialist), determination of depth perception (Howard Dolman apparatus), measurement of reaction of the visual fields (gross perimetry), and color vision. A brief interview with the candidate provides enough information for the instructor to give a tentative prognosis on the person's ability to complete the driver's training program successfully and pass the road performance test. With the blessings of the special education instructor, the low vision specialist can fit the patient with his own telescopic system.

THE BIOPTIC TELESCOPE The bioptic telescope used for driving is a miniaturized telescope mounted in the upper portion of a conventional spectacle correction. It is adjusted so that the patient normally views through the standard lens. This allows the patient to enjoy an unobstructed field for driving (the acuities are still reduced). It is more important for driving safety to have a wide field of view than it is to have 20/20 acuity. If the patient looks through the telescope, the field of view is restricted to approximately 35 degrees (binocularly). This is too narrow (compared to our minimum standard of 140 degrees) to be practical for constant use. Also, depth perception is upset and everything moves twice as fast when viewing the world through the 2.2× telescope. The patient spends most of the time viewing through the unmagnified conventional lens where there is minimum obstruction to walking, depth judgement, and general orientation (American Optometric Association, 1974).

When the patient drives and needs better acuity to see an object or potential hazard ahead, a slight drop of the head allows him to see through the telescope. The patient looks through the telescope just long enough to locate and recognize the object or situation in question and then quickly returns to viewing through the conventional lens and full field. The appropriate maneuver to avoid the obstacle, adjust the speed, etc., can then be accomplished safely. It is important to remember that even though the telescope provides 20/40 or better acuity, it is used only a minimum amount of the driving time for locating and recognizing highway signs, objects, and other needed information requiring the better acuity afforded by the telescope. During this time the patient is instructed to wear the telescopes while riding as a passenger in a car to practice locating objects, signs, etc.

Driver's Training Program

Once the patient understands the use of the telescope and demonstrates some proficiency in locating objects, a formal driver's training program is initiated. Since the patients selected have already had some driving experience, only a brief review of the instrumentation of an automobile is conducted. The student (patient) is required to study highway and driving regulations and is quizzed on these in a review session with the instructor. Depending on the amount of experience the student has had driving, the instructor may have him work in a driving simulation apparatus. This gives the student a feel for the road, driving conditions, and instrumentation. It also gives the instructor a little more insight concerning the type and extent of training this individual needs. The student is given a brief exposure to driving in a special education car. The instructor also evaluates his ability to spot objects, recognize potential road hazards, and see specific traffic signs while riding as a passenger.

The student is taken to the local office of the state driver's licensing bureau to take the written examination and obtain a temporary driver's permit. Upon receiving the permit, weekly training sessions are conducted. As emphasis is placed on building the student's confidence in handling the car, the student is progressively exposed to more complex driving situations. The instructor is concerned with the student's ability to maneuver the car on and off the road, judge distances, follow directions of road warnings, navigate in strange places, recognize potential road hazards, and with his overall common sense performance behind the wheel. These sessions will continue until the instructor is satisfied with the student's ability.

ROAD TEST AND LICENSING The third phase of the driving program is a comprehensive road test by specially trained state officers who are familiar with the special driving needs of the handicapped and have been introduced to the concept of the bioptic telescope for driving. These road tests are more extensive than a routine test and subject the student to a wide variety of traffic conditions.

Upon successful completion of all three phases of the driver's training program, the student receives a valid state driver's license. It will indicate on the license that the special telescopic device should be worn at all times. In Florida, the student is photographed wearing his bioptic system for his driver's license picture (personal communication with Dr. Jay Newman).

The license should be renewed on a yearly basis for the student's protection. An annual eye examination which indicates no significant change in acuity, in combination with an accident-free record, should qualify the individual for a new license.

Safety Record

This type of approach to training people to drive with telescopic spectacles is a unique way to assure the public that competent drivers are being licensed to drive on our highways. An extremely good safety record is expected from this type of program. At present, a remarkable safety record has been accomplished by 26 drivers fitted with telescopic lenses by Dr. Korb. He reports that these 26 drivers have logged 32 man-years of driving with bioptic telescopes and have an unblemished record (Korb, 1970). The program as outlined in this article will allow more people to be licensed to drive on our highways without disturbing this remarkable highway safety achievement.

A structured program in driving instruction will also allow formal research to be conducted regarding new safety features that can be used to enhance driving safety (mirror systems, depth gauges, etc). Other subjects needing investigation include acuity needs on the road (Burg, 1966), advisability for limiting expressway driving (i.e., how high speed affects acuity through a telescope), night driving and telescopes, glare factors involved in the use of telescopic lenses, and the effects of vibration. A myriad of other questions are yet unanswered, if not unasked.

Summary

In summary, a comprehensive program in driver's training has been proposed. This program includes the expertise of the optometrist/ophthalmologist, special education instructor in driver's training, and specially trained, road-performance test officers. It is important to realize that partially sighted persons need to drive as much as anyone else. Through this special program they are provided the necessary visual functions to be able to drive by using the bioptic telescope. More importantly, they are taught how to *use* these newly acquired functions in a special program of instruction and testing.

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Cardiovascular Endurance Training for Blind Persons

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Abstract: *Cardiovascular endurance training (CVET), or continuous, whole-body activity involving a major portion of the total muscle mass, is suggested as a positive and feasible activity for blind persons. Evidence is presented that supports CVET as an agent capable of 1) producing adequate levels of physical fitness, 2) reducing to some degree the probability of coronary heart disease, and 3) reducing the effects of the state of anxiety accompanying unguided blind mobility. A program of chair stepping, which may be implemented as a progressive and productive CVET regimen, is described.*

▪ Cardiovascular endurance training (CVET) may be defined as continuous or uninterrupted whole body activity, involving a major part of the total muscle mass, which results in marked elevation of heart rate (HR) for a minimum of several minutes. Improved cardiovascular endurance is considered of major importance to blind persons for the following reasons. First, it is likely the most neglected component of physical fitness because of the difficulties associated with blind persons' participation in CVET. Second, absence of cardiovascular endurance has been recognized as a risk factor contributing to an increased probability of coronary heart disease (CHD). Finally, there is some evidence suggesting that CVET may relieve, to some degree, chronic anxiety.

CHAIR STEPPING EXERCISE

Although activities such as jogging, walking, swimming, and cycling are preferred, a feasible alternative for blind persons, if no facilities are available, is chair stepping. (Another alternative is stationary cycling; however, a relatively expensive piece of equipment is required.) Chair stepping, an extremely productive training regimen (Faria, 1970), involves stepping up onto a chair approximately 17 inches high and returning to the floor to a four-count cadence. On count one, the lead foot is placed upon the chair seat. On count two, the trailing foot is placed upon the seat. The reverse process back to the floor constitutes counts three and four. The lead foot may be changed from right to left or vice versa when desired. Placing the chair in a corner will ensure its stability.

Two points must be emphasized when initiating a CVET program: 1) proceed slowly and cautiously and 2) progress to more strenuous exercise when possible. With respect to the former, a complete physical examination, including an exercise electrocardiogram, is desirable. When clearance from a physician has been obtained, chair stepping may begin on a daily basis.

Initially, a duration of one minute and a stepping rate of 15-20 complete cycles will suffice. The duration of exercise may be increased one minute per week until ten minutes is performed easily. At that time, the intensity of the exercise, in this case the stepping rate per minute, may be gradually increased. This progression is conservative for the reason that changes in life style (and daily exercise is just that for the person who is not used to it) are difficult at best and the greater the change, the less likely it is that the person will adhere to it (e.g., crash diets). In addition, slow progression reduces the possibility of overwork and/or injury to little-used muscles and joints.

Pulse Rate Is Monitored

It is helpful to monitor pulse rate at the wrist (radial pulse) or at the angle of the jaw (carotid pulse) immediately following exercise. Pulse rate must be taken immediately as it quickly declines when exercise is discontinued. Mastery of pulse-taking techniques will ensure valid pulse counts and minimize underestimation of exercise pulse rate. If, following the initial ten-week period, pulse rate is elevated to approximately 60 percent of the heart rate range (see Table 1), then an appropriate intensity level is assumed. Prior to completion of the initial ten-week period, however, pulse rates should be maintained somewhat below 60 percent of the heart rate range. (A similar procedure can be applied to stationary bicycling.)

Stamina or cardiovascular endurance is primarily dependent upon the body's ability to deliver oxygen (oxygen uptake equals $\dot{V}O_2$) to working muscles. The highly trained individual possesses a well-developed oxygen transport system that will permit prolonged exertion. The untrained individual is forced to limit exertion owing to oxygen lack at the muscular level. Two factors are of critical importance in the delivery of oxygen: 1) cardiac output and 2) extraction of oxygen from blood flowing through the muscles.

INCREASED CARDIAC OUTPUT Cardiac output ($\dot{Q}$) may be increased through an increased stroke volume (outflow of blood from the heart per beat). This is a product of increased contractile strength associated with the trained heart, comparable to the increase in strength of skeletal muscle resulting from weight training. Since $\dot{Q}$ is computed by multiplying rate (HR) times stroke volume, it is logically deduced that as stroke volume increases, HR is reduced for a given level of Q. During submaximal exercise and rest, the trained individual will demonstrate a markedly lower HR than the untrained person because of the contractile strength of the heart. For example, a marathon runner may demonstrate a resting HR of 40 beats. min^{-1} or less compared to the average male adult's 75 beats.min^{-1}. Therefore, the cost of a given activity with respect to the heart will be less for the trained individual. Under maximal stress conditions, the trained individual will be capable of greater work output (physical working capacity) because of greater maximal Q.

Extraction of oxygen from blood is dependent upon the degree of vascularization surrounding the musculature. CVET serves to increase vascularization; in other words, more unloading sites are provided for oxygen-carrying blood. As more oxygen is extracted per unit of blood flow, less demand is made upon the heart as a pump. Therefore, increased extraction capabilities combined with a greater Q greatly contribute to submaximal work efficiency as well as total work output prior to exhaustion. Many additional physiological changes that occur as a result of CVET contribute to physical working capacity (e.g., increased hematocrit, hemoglobin, blood volume, pulmonary diffusion efficiency, and delay in the onset of anaerobiosis). For the purpose of the present discussion, however, consideration of these factors has been omitted.

Documentation of Changes

The above physiological changes have been found in many well-controlled studies (Ekblom, Astrand, Saltin, Stenberg, & Wallstrom, 1968; Knuttgen, Nordesjo, Ollander, & Saltin, 1973; Pollock, Cureton, & Greninger, 1969). In addition, these changes have been classically demonstrated by Dr. Emerson Foulke, a blind professor at the University of Louisville. Table 2 contains results obtained from Dr. Foulke's approximately ten weeks of CVET, demonstrating that his aerobic capacity or ability to deliver oxygen during muscular work was increased by 28 percent. Greater aerobic capacity contributes to physical working capacity (PWC) or total work output prior to exhaustion. In the present case, PWC was doubled. Maximal HR stayed constant throughout training; however, the critical comparison is HR response to a given level of work. At 1080 kgm.min^{-1}, HR dropped from 195 to 168 beats.min^{-1} following training. Such a reduction is reflective of an increased physiological efficiency. Tasks which, prior to training, may have been physically demanding (such as stair climbing) are now accomplished with considerably less stress. The training regimen responsible for these results consisted primarily of stationary cycling performed four to five days per week at an HR of approximately 170 beats.min^{-1} for a total work time of 15 minutes.

It should be noted that Dr. Foulke was considered to be extremely active (he was a tandem bicyclist) prior to CVET. In spite of his "active" life style, at least in comparison to other members of the blind population, his cardiovascular endurance was low. This finding supports the need for CVET even among those who consider themselves "active."

RISK FACTORS OF CHD Risk factors that increase the probability of coronary heart disease (CHD) have been identified. Some of them, heredity (heart attack in several blood relatives), sex (middle-aged men are more likely to have CHD than women), and age (older men and women are more likely to have CHD than middle-aged adults) are beyond the control of the individual. Others, such as high blood pressure and diabetes, can be medically treated. Still other risk factors are difficult to cope with because they are ultimately dependent upon life style; however, notwithstanding their stubborn nature, obesity, emotional tension, smoking, high blood fat levels, and physical inactivity can be overcome to a large extent.

Obviously, physical exercise will eliminate physical inactivity as a risk factor. In addition, evidence indicates that physical exercise may have a positive effect in the reduction of obesity and high blood fat levels. (The effects of physical exercise upon emotional tension will be discussed later.) Strong support is gained for CVET as a productive and beneficial activity for blind persons when considering the combined effects of improved cardiovascular efficiency and the reduction of recognized risk factors associated with CHD. Noted cardiologist Samuel Fox (1968) has suggested the following benefits with respect to CHD arising from a program of CVET.

CVET Reduces Risk Factors

1. Increased coronary vascularization: oxygen is supplied to the heart through the coronary arteries. Increased blood vessel dimensions (diameter) and collaterals resulting from CVET may help to insure adequate oxygen supply. Unfortunately, in the typical, inactive middle-aged man coronary circulation is probably markedly reduced. The atherosclerotic process (build up of fatty plaques on the interior walls of arteries) gradually reduces the diameter of blood vessels, thus inhibiting adequate blood flow. When a narrowed coronary artery is finally completely blocked, usually by heaped-up liquid plaque or a blood clot, the heart muscle is deprived of oxygen-rich blood, resulting in "heart attack" or, more precisely, a myocardial infarction.

2. Improved myocardial function: efficiency of the heart muscle is reflected in resting and exercise heart rate. Bradycardia (reduced heart rate) is primarily a product of increased contractile strength of the heart. As a result of CVET, bradycardia reduces the pumping work of the heart. In addition, the increased contractile strength and myocardial hypertrophy reduce the effects of the heart attack if one should occur. Furthermore, the probability of recovery from heart attack is greater in the trained individual.

3. Decreased levels of cholesterol and serum triglycerides; fatty substances in the blood stream can be removed as fuel during exercise. Once removed, the likelihood of deposits forming on arterial walls is reduced. Thus, the atherosclerotic process may be arrested to a significant degree. It should be noted that this is an acute effect offering no long-term protection if exercise is discontinued.

Age	Maximal Heart Rate (Approximate)	Exercise Heart Rate (60% HR Range)*
20–29	200	150
30–39	190	140
40–49	180	130
50–59	170	120
60+	160	110

*Percentage of maximum HR is determined, following Karvonen (1957) as follows: percentage MC = RHR + percentage TL X (MHR-RHR), whereby percentage MC = percentage of maximal capacity. RHR = resting heart rate; MHR = maximal heart rate; percentage TL = percentage training level.

Table 1. Age-Adjusted Exercise Heart Rates

4. Reduction of obesity; obesity is a product of an improper energy balance. In other words, caloric intake is greater than caloric expenditure. A typical exercise session requires a fairly large caloric expenditure (300-400 KCal), although by itself exercise will take considerable time to reduce obesity. For example, expending 400 KCal per day through exercise, assuming a constant caloric intake, would result in the loss of approximately one pound in ten days. Combined with a moderate diet in which caloric intake is reduced 400 KCal (e.g., one average size piece of cake) the exercise would result in the loss of one pound in five days.

REDUCTION OF STRESS In addition to strengthening the heart and increasing physical working capacity, there is some evidence to suggest that exercise may contribute to offsetting the effects of chronic psychological stress (Michael, 1957). Electromyographic (EMG) studies have provided evidence supporting the tranquilizing effect of exercise (deVries & Adams, 1972). They have demonstrated an acute reduction in nervous tension as a result of 15 minutes of moderate exercise and a chronically reduced tension level following a physical conditioning program. Additional evidence indicates that less of the "adrenalin-type" chemical is secreted by the body in response to emotional stress in the fit person than in the unfit (Zohman, 1974). This is not intended to imply that physical exercise is a primary agent in the control of psychological stress, but rather that physical exercise supplements progressive relaxation techniques such as meditation.

A theoretical construct is offered as additional support for physical exercise as an agent for reducing psychological stress: Selye's (1956) theory, concerning a stress syndrome consistent in form regardless of the nature of the stressor, implies that physical and psychological stress may have similar effects. (For example, it has long been known that stressful situations, whether physical or psychological, result in stimulation of various physiological responses such as increased heart rate and catecholamine excretion.) The evidence previously cited demonstrates that the effects of physical stress may be significantly reduced through physical training. Therefore if a cross-transference of positive benefits derived from physical training occurs, the effects of psychological stress would be likewise reduced.

Consider the Stress Pulse Ratio (SPR), as developed by Peak and Leonard (1971), reflecting the relative stress incurred by blind persons traversing an unfamiliar route with and without a guide. If HR is 20 percent higher during the unguided trial, SPR is recorded as 20 percent. A theoretical comparison of the SPR responses of a physically unfit blind person with those of a physically fit blind individual with equally versatile mobility is presented in Table 3.

Variable	Pretraining	Posttraining	Δ	Percentage of Change
VO_2 max (ml.Kg.$^{-1}$min^{-1})	35.6	45.22	9.86	28
HR max (beats.min^{-1})	195	195	0	0
HR (1080 Kgm.min^{-1})	195	168	−27	14
VE max (L.min^{-1})	99.73	123.38	23.65	24
R	1.03	1.08	.05	5
PWC (Kgm)	12,420	24,120	11,700	94
Highest Completed Load (Kgm.min^{-1})	900	1,260	360	40

Table 2. Effects of Cardiovascular Endurance Training

Variable	Unfit	Fit
HR resting	85	65
HR given submaximal load	150	130
HR maximal	200	200
HR guided trial	100	80
HR unguided trial	120	100
SPR	20	20

Table 3. Theoretical Comparison of Unfit vs. Fit Blind Persons

It is readily apparent that both the unfit and fit individuals experienced stress as reflected in SPR scores. Notwithstanding the similarity of SPR scores, it is probable that the unfit individual experienced greater stress. The rationale is based on the fact that HR as a reflection of stress more closely approached maximal levels in the unfit individual (60 percent of maximal, as compared to 50 percent for the fit individual).

Therefore, although SPR scores indicate a similar stress level, the relative effects derived from that stress were likely actually not similar when placed in proper perspective.

Summary

Cardiovascular endurance training has been demonstrated to reduce the probability of coronary heart disease, reduce the effects of anxiety (such as that produced by travel without a guide), in short, to promote both physical and mental fitness. For blind persons who do not participate in activities such as jogging, walking, and swimming, chair stepping provides the appropriate type of exercise. Beginning slowly and building up to more strenuous exercise, the blind individual can thus increase physiological efficiency and experience less stress, physically and psychologically, as he goes about his daily activities.

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Radio Reading Services Report

A special report on current activity in radio reading services has been prepared by Mrs. Patricia S. Smith, director of the Information Department, American Foundation for the Blind. It is available free on request from Mrs. Smith, AFB, 15 West Sixteenth Street, New York, N.Y. 10011.

Carl Sandburg and His Glasses

There was always something naive and endearing about Carl Sandburg, a kind of guilelessness, as is plain in the little incident of his encounter with a famous Chicago ophthalmologist, Dr. J. Wendell Clark. Dr. Clark was a great admirer of Sandburg's writing and was so distressed to hear that Carl feared he was going blind that he offered to do without charge whatever he could to avert the tragedy. When he had made a thorough examination of Carl's eyes and could find nothing dire, he looked at the glasses Carl had been wearing. "When did you get these glasses?" he asked.

Carl said, "Last year," and, when asked where, named one of the best optical firms in the city.

"But where did you get the prescription for them?" demanded Dr. Clark.

"Oh, an old man in Galesburg gave me glasses when I was fourteen," Carl said, "and whenever they broke I just took them in and got new."

Dr. Clark's new prescription cured Carl's threatened blindness, and he wrote in a copy of *Chicago Poems,* "To Dr. J. Wendell Clark who did what God forgot to do."

Quoted from *Many Lives—One Love,* by Fanny Butcher, Harper & Row, 1972, p. 377.

A Walking-Jogging Program for Blind Persons

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Abstract: *Many blind persons have a tendency to limit their physical activity to only the most necessary movements. With a railed track (or any adaptive mechanism or technique permitting intense, prolonged activity), motion can be increased and physical fitness promoted. One of the best indicators of physical fitness is the individual's aerobic capacity or cardiovascular endurance. Walking and/or jogging programs for individuals who are personally motivated open the way for greater physical and mental well-being.*

■ In January 1974, the Tucson Association for the Blind (T.A.B.) began its first program of cardiovascular conditioning. Since then, groups of blind people, all a little skeptical about exercising their hearts and lungs but willing to try something new, have—with their physicians' approval—taken part in this successful physical fitness program.

The purpose of cardiovascular conditioning is to develop cardiovascular endurance, as signified by the body's ability to perform work of moderate intensity for a prolonged period. This is aerobic (or oxygenating) activity, one of the best indicators of overall physical fitness. The main objective of an aerobic exercise program, therefore, is to increase the body's capacity to process oxygen, i.e., to deliver it to the tissue cells where it is united with food for the production of energy.

PARTICIPANTS IN THE PROGRAM The participants, who have not been doing speed walking and distance walking since their loss of vision, joined the program for a variety of reasons. One person, diabetic since childhood, had been extremely active in his youth and sought regeneration of his former abilities. Another, who had been a successful farmer, believed that walking would not only improve his health but would offer variety to his day and a chance to get outdoors. Still another was taking mobility and wished to continue to improve his travel skills. One young man, active in physical education a few years earlier at the Arizona State School for the Deaf and Blind, was full of excess energy that he was hoping to channel through the T.A.B. program. Others have begun walking to improve their looks, follow a counselor's suggestion, join the crowd, improve self-discipline and concentration, or just to try something they have never done before.

Although ages have ranged from 18 to 72, most participants are over 50 and the majority have had sight some time in their lives. They have felt the restrictions of physical activity that often accompany both aging and loss of vision, restrictions inherent in not being able to move easily through the environment.

Although no one has entered the program for the purpose of rehabilitation for specific physical problems such as heart and blood vessel disorders or obesity, there is evidence that cardiovascular conditioning has been instrumental in the recovery from or improvement of various disorders. However, the use of conditioning for these purposes is far beyond the capacity of our non-medical facility and is best left to medical professionals.

At T.A.B. guidelines such as those of the National Jogging Association and the Run-For-Your-Life Committee of the Los Angeles County Heart Association are used as suggestions, but each program is suited to the individual. Cause and degree of blindness have some effect on both motivation and ability, as does age, general physical health, and individual reactions to climatological changes and other factors. Motivation and ability, in turn, influence the choice of speed and distance goals.

Initially, the exerciser and instructor set up time and/or distance goals that are reevaluated periodically as the individual advances and becomes more acquainted with his potential. Usually, if the person can walk a mile, that is the take-off distance from which we work to decrease time measurements. This distance was chosen for its psychological value, but if it is not attainable, instead of improving speed, the initial goal becomes to walk that mile. It is assumed that once the goal has been reached, the exerciser will maintain at least this level of fitness. (As an instructor, I feel that my goal for any T.A.B. member has been reached if the individual makes walking an integral and active part of his life.) The emphasis, though, is on getting out there and walking three, four, or five times a week. Consistency is stressed as well as gradual improvement, along with the freedom and joy of movement and the sense of independence that walking and jogging engender.

THE TRACK WITH RAIL Walking and jogging for blind persons is facilitated by a 220-yard rail that acts as a secure hand-guide, allowing the user to hold a support cane with his free hand. After a few turns around the railed track, the unobstructed ground surface becomes familiar enough to allow for as wide open movement as each exerciser is capable of making. Persons moving at approximately the same speed sometimes use the track together. This offers the added attraction of group support. The majority, though, go alone or with an instructor. In addition, a board with each walker's name in braille and a nail on which are hung rings, indicating the distance each has walked, assists in keeping track of the amount of use the rail gets and allows individuals to keep in mind their own cumulative performances and each other's.

Walkers are encouraged to wear, if not good track shoes, at least rubber-soled shoes, which, along with the solid earth surface of the track, protect the muscles, joints, and skeletal system from as much shock as possible. Since special clothing is really not needed, walkers conveniently wear their street clothes. Joggers, on the other hand, do usually change into shorts and T-shirts or other appropriate loose-fitting clothes.

Movement Techniques and Warming Up

The walking and jogging methods of every person vary, and people seem to adjust their techniques to their own speed and body conformation. For best movement technique, exercisers stand comfortably erect, swinging the free arm forward and back with a slight spine rotation in tune with the leg motion, point the toes straight ahead so that the legs pass closely by each other, and concentrate on a rolling, heel-to-toe motion.

Before walking around the track and always before jogging, participants benefit from basic warm-up exercises to loosen the leg, back, and arm muscles and to prepare the cardiovascular system. (Before the first walk, the exerciser is warned that he may experience some muscle soreness, principally in the legs, but that this will eventually pass.) The rail can be used as a bar, to give support and information about location.

Deep Breathing

During walking as well as other daily activities at T.A.B., emphasis is placed on deep breathing in order to exercise the lungs and to make the individual more aware of this body mechanism. Because some people tend to feel embarrassed if they have to breathe hard, believing that this can be construed as a sign of weakness, the instructor expresses constant appreciation of deep, heavy breathing as indicative of how hard the heart and lungs are working.

There are alternative and supplementary ways to promote cardiovascular endurance, not the least of which are bike riding and swimming. As with walking and jogging, adaptations for blind persons are possible. Another exercise promoting fitness is skipping rope. Also, some exercise equipment, such as treadmills and stationary bicycles, can be utilized effectively and easily. Actually, any exercise that engenders aerobic activity and is maintained for a period of time (at least several minutes) is beneficial.

BENEFITS OF EXERCISE Human beings deserve to be as healthy and to feel as good as they possibly can. The sense of feeling good has been evidenced over and over again by persons involved in walking and jogging programs: walkers have stated that they feel 50 to 100 percent better since beginning the T.A.B. program. If a period of rain makes it impossible to walk extensively, the usual comment is, "I just haven't been feeling as good lately." Also mentioned as rewards are "better elimination," "better sleep," and "more energy."

Evidence shows that regular physical exercise, and especially cardiovascular conditioning, is a contributing factor toward better mental and physical health. Because the individual who is blind tends to be less physically active than his sighted counterpart, there is a special reason to adapt and promote sports and other forms of exercise for visually impaired people.

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A Closer Look Workshop

Closer Look, the national information center for the handicapped of the U.S. Department of Health, Education, and Welfare, held a one-day conference on career education and vocational programs for handicapped adolescents on May 3, 1975, in Montgomery County, Maryland. The conference was organized to familiarize that community with the financial aid available through federal and state programs and to describe new approaches in launching handicapped young adults into the world of work.

The conference was attended by over 200 parents, teachers, and handicapped persons as well as representatives from all of the agencies that provide vocational services to the handicapped in Montgomery County. A speaker from the Maryland Vocational Educational Division outlined the procedures involved in obtaining state funds for organizing a vocational program in the community and gave examples of some of the projects already working in different areas of the state.

As a result of the conference a task force made up of parents, teachers, and handicapped individuals was organized. This task force will be exploring the possibilities for job training and employment for the handicapped in Montgomery County. It will also launch a campaign to work with employers, the county school system, the community college, and the Division of Vocational Rehabilitation on improving the services available to handicapped people.

Information and materials for setting up similar employment workshops are available from Closer Look, National Information Center, Box 1492, Washington, D.C. 20013.

The Vocational Development and Success of Visually Impaired Adolescents

TERRY M. DAVIDSON, Ph.D.

Dr. Davidson recently received his doctorate in rehabilitation counseling/special education from the University of Pittsburgh and was most recently affiliated with the Elwyn Institute, Philadelphia.

Abstract: *Through an extensive review of the literature, it was found that visually impaired adolescents are not as vocationally immature as has often been suggested. Cultural patterns of exclusion from certain life and work roles play a very important role in the failure of many visually impaired individuals to enter the mainstream of American life. Improvements in the career education of visually impaired persons do need to be made, but an equally strenuous, well-organized effort to combat negative attitudes toward individuals who are visually impaired also needs to be mounted.*

▪ In what has sometimes been referred to as an era of "the broadening vistas of jobs for the blind," a survey of the vocational success of 644 legally blind adults (Bauman, Crissey & Scholl, 1969) has revealed that more than half of the males surveyed were employed in 13 occupations, while more than half of the females were in only nine occupations. Furthermore, 87 percent of the persons interviewed in that survey earned less than $8,000 per annum from their principal job (at a time when the median U.S.income was $8,400 per annum). To further illustrate what appears to be unsatisfactory vocational outcomes for the visually impaired population as a whole, a number of surveys (Bauman, Crissey & Scholl, 1969; Buell, 1956; Fitting, 1955; Hatlen, 1972; Hyman, Stokes & Strauss, 1973) have discovered rates of unemployment far in excess of those for the general population, with that rate sometimes being reported in the range 40 to 50 percent (Hatlen, 1972; Hyman, Stokes & Strauss, 1973).

On the surface, these findings might appear to support a widespread belief that visually impaired adolescents demonstrate abnormal and inadequate vocational development. Giving rise to this belief have been the various suggestions that visually impaired children have had less opportunity than sighted children to engage in work roles and that, as a consequence, they are more undecided and less involved in their vocational planning than sighted students. Furthermore, one research study (Land & Vineberg, 1965) concluded that visually impaired children are more "externally controlled" (i.e., they tend to feel that their lives are controlled by outside forces). Thus, the thrust of the literature is that there is generally a high incidence of vocational immaturity among visually impaired adolescents.

CAREER DEVELOPMENT SURVEY

In view of these largely subjective opinions, a 193-item Career Development Survey was administered to a sample of 89 public and residential school visually impaired ("legally blind") 8th–12th grade students, with their responses being compared with the responses of 40 sighted students to the same survey. The survey was composed of (a) the *Career Planning Involvement* scale of the *ACT Assessment of Career Development* (American College Testing Program), (b) the *Exploratory Occupational Experience* sub-scales of the *ACT Assessment of Career Development,* (c) the *Career Choice Attitude* scales of the *Career Maturity Inventory* (Crites), and (d) the short-form version of the *Nowicki-Strickland Locus of Control Scale for Children.* Based on these measures, the results (Davidson, 1974) indicated that the visually impaired subjects as a group were *as involved* in career planning, had a *similar level* of exploratory occupational experience, and showed the *same* career maturity as the sample of sighted adolescents. In addition, it was found that the visually impaired adolescents were no more "externally controlled" than the sighted adolescents.

While the findings of this exploratory research should not be generalized to the whole visually impaired adolescent population, there is now at least an indication, based on some objective measures, that visually impaired adolescents may not be as vocationally immature as they are often portrayed. This suggests that the unsatisfactory employment outcomes referred to earlier cannot be ascribed solely to inadequate vocational development within the individual. We might therefore question, as Jaques and Hershenson (1970) have done, the influence of cultural patterns of exclusion of the impaired from certain life and work roles, and probe the social structure which Winton (1971) characterized as being either "non-supportive or too-supportive."

Research into employer attitudes has documented an effective exclusion from vocations. When 108 Minnesota employers were asked by Williams (1972) whether they would consider blind persons for production, management, clerical or sales jobs, 71.5, 58.5, 52.4, and 72.2 percent respectively responded "Never." When these completely negative responses are combined with the more evasive "Sometimes, but not usually" response, the percentage responding negatively rises to 89.2, 89.6, 80.4, and 93.0 percent respectively. Recently, Baker (1974) has suggested that there may be an explanation of such hiring practices in the link between the authoritarianism of business managers (evidently a contributing factor to their acquiring power and status in the management structure) and the demonstrated negative attitudes of authoritarian people toward impaired individuals.

Yet the problem is almost certainly not restricted only to the attitudes of management personnel, but extends to encompass the attitudes of society and societies in general. Jernigan (1973) has written:

> Blindness can, indeed, be a tragedy and a veritable hell, but this is not because of the blindness or anything inherent in it. It is because of what people have thought about blindness and because of the deprivations and the denials which result. . . . It is because the blind, being part of the general culture, have tended to accept the public attitudes and thus have done much to make these attitudes reality (p. 355).

In a similar vein, Geissler (1970) has stated that occupations considered to be particularly suitable for the blind in one country may be considered absolutely unfit for the blind in another due, not to the nature of the impairment—which is the same in all cases—but solely to the differing conceptions of a blind person to be found not only among the sighted but among the blind as well.

Successful Public Relations Efforts

Encouragingly, Kenmore (1973) reports that public relations efforts in a few (unspecified) countries have made a tremendous difference in the opportunities afforded blind people for admission into training programs and jobs. Kenmore believes that "to have public attitudes formed as we would like, there needs to be constant propaganda, constant attention drawn to the fact that blind people can and do lead normal lives" (p. 115). In contrast to this hopeful ideal, it is interesting to note English's (1971) opinion that rehabilitation personnel have, in general, been dealing with stigma only superficially and that they have successfully avoided any meaningful encounter with some of the most critical problems facing disabled persons and having to act assertively on their behalf. Thus, English characterizes direct client services over the last quarter century as being little more than "holding actions" against a steady background of negative attitudes. In order to direct the cumulative findings of various attitudinal studies into a plan of action, English (1971) has put forward the following ten-point "Action Methodology":

1. Increase the amount of meaningful contact between the disabled and the non-disabled.
2. Provide the disabled with the facts about stigma and improve their behavioral skills in dealing with the non-disabled.
3. Influence the mass media to present more realistic views of disability and disabled persons.
4. Design stimuli, to be presented via the mass media, to reduce stigma.
5. Include the disabled person's family and significant others in his treatment program.
6. Organize the disabled politically.
7. Pressure elected officials to review and repeal legislation that is dysfunctional and unnecessarily restricts the life style of disabled persons.
8. Promote and participate in citizen advocacy programs.
9. Change the concept and design of institutions.
10. Further professionalize the human services.

By way of explanation, this last action is illustrated by the author with the following suggestions: (a) Engage in sensitivity training to identify and deal with our own tendencies to stigmatize the disabled and different. (b) End the demeaning financial exploitation of disability labels by community resources serving the disabled. (c) Establish professional standards which can be used as guidelines for controlling the quality of human service personnel. (d) Make professional associations more political. (e) Actively follow-up disabled persons after formal termination of services. (f) Reduce or eliminate local and national conflicts between human service personnel. (g) Disseminate information on stigma.

In an attempt to institute "total rehabilitation" services within a community, the Wood County Project (Wisconsin Division of Vocational Rehabilitation, n.d.) concluded that it was in fact possible to obtain improvement in public attitudes concerning vocational rehabilitation, although survey findings demonstrated a need for the high school-age group to be given greater exposure to rehabilitation concepts. In view of such a finding, the projected attempt by Gorman (1974) to actually introduce the study of attitudes towards impaired people into the curricula of a number of primary and secondary schools ought to be followed with interest. By avoiding the exposure that is so common for school children (the collection of material to raise funds, donating money) and, instead, focussing in an integrated manner on the four basic areas of personal experiences, special visits outside the school, audio-visual instructional material, and discussions, Gorman anticipates that more positive attitudes will be engendered in the younger generation. As part of the school-based experience, the child would be given opportunities to possess simulated impairments and, importantly, would subsequently be shown techniques to minimize or eliminate the resulting disabilities and handicaps. Such a program, integrated into the school curriculum over a wide age range, expands on the single presentation concept that is currently employed in the community relations departments of a number of agencies (e.g., Greater Pittsburgh Guild for the Blind, 1974; New York Association for the Blind, 1973.)

CONTINUING NEED FOR TRAINING

While concerted efforts employing well-devised plans to combat stigmatization may in the long term serve to open more doors to acceptance and employment, there will almost certainly still exist a concurrent need for more widespread training facilities in order to provide the visually impaired person with first-rate marketable skills. It is perhaps symptomatic of a general lack of emphasis on new training and employment areas that, in the five years 1970–1974, only some 3 percent of the article space in the *New Outlook for the Blind* has related directly to these two topics (as distinct from the more general "placement" and "vocational education" articles). Furthermore, if the articles devoted to just four sophisticated careers (teaching, computer programming, vending stand

". . . the time has come for a national organization of programs to . . . carry out more forthright and massive campaigns to combat widespread negative attitudes toward impairments. . . ."

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operation, and taxpayer service representative) are now removed from this calculation, the remaining percentage of article space that is devoted to any other specific training and employment areas falls to nearly zero (0.6 percent). The dangers of such a narrow focus are emphasized by Hatlen's (1973) warning that educational programs and vocational rehabilitation services have not yet faced the problem of what will happen to multiply handicapped children when educational services are terminated.

In view of the general lack of emphasis on employment, the report *Planning services for the blind for the decade of the '70's* (Mallinson & Blasch, 1973) is of relevance in that it does present a number of recommendations for future action. These recommendations can be summarized as follows:

1. Developing evaluation projects to study the relevancy of college training to future occupational opportunities.
2. Initiating a series of occupation-in-depth institutes to prepare guidelines for the selection, training, and placement of blind persons in specific allied health areas, information service areas and business enterprise areas.
3. Setting up a series of seminars to inform employers of the advantages of employing blind individuals in specific occupational areas.
4. Establishing a central clearinghouse of information on employment of the blind.
5. Devising special tools and appliances in several fields that will enable blind persons to perform the duties involved in a wider variety of job classifications.
6. Provide a national procedure for disseminating information on the design, functions, and accuracy of specialized equipment.
7. Conducting further research and demonstration projects to develop opportunities in training schools so as to prepare blind people to enter industry.
8. Intensify the rehabilitation counselor's activities in the field of placement.

Many questions, such as the nature and the degree of integration of training facilities, remain to be given more extended consideration. Should reliance be placed entirely on local facilities specifically devised for the visually impaired, such as the electronics-oriented Industrial Training Laboratory in Daytona Beach, Florida (Hoskins, 1974)? Should we consider the usefulness of a facility paralleling the National Technical Institute for the Deaf rather than opting solely for local or regional vocational preparation? Can reliance be placed upon programs that depend on the integration of visually impaired students into sighted technical facilities (Borchert, 1966, Volin, 1974)? Or, what is the ideal balance among such different approaches as these three, such that the most appropriate training services are made available to visually impaired people? It is obvious that the answers call for systematic on-going discussion and implementation rather than relying on the piece-meal solutions of the present and past.

MONITORING THE EMPLOYMENT SITUATION Over and above the planning of attempts to reduce stigma and the opening up of new training and employment areas, there would seem to be considerable value in forming an organizational body to monitor the true employment situation of the visually impaired on an on-going basis. Recently, Bledsoe (1974) has suggested that the way the field continues to make itself "look good" with regard to employment is by reiterating what he believes may well be a false notion that the employment situation for the blind has changed dramatically for the better since the 1940's. Therefore, the function of this enquiring body would be to gather comprehensive statistics so that objective assessments could be made concerning the status of employment for the visually impaired as a whole, as well as for particular sub-groups of the visually impaired. A further function could be to examine world-wide legislation as to its appropriateness and utility for the United States and to maintain liaison with international committees on employment of the visually impaired (Geissler, 1970). In addition, such a body could have the responsibility for disseminating information to agencies and consumers concerning the mechanics and the enforcement of the provisions of relevant U.S. legislation, such as the Affirmative Action program (Section 503 of the 1973 Rehabilitation Act).

Although the research on vocational development referred to here (Davidson, 1974) represents a small step in understanding what is probably a complex entity, there is now at least some evidence that visually impaired adolescents may not be as backward in their vocational development as has often been suggested or implied. This should not be taken to infer that there should therefore be any complacency regarding the visually impaired adolescent's involvement in career education activities, especially when there is a growing movement in this direction. In fact, the suggestion of employing "career consultants" for visually impaired students (Pumo, 1970) is likely to become increasingly important in maintaining parity between visually impaired and sighted students as school programming diverges further from the traditional academic approach.

Underestimation of Vocational Development

What is inferred, however, is that the vocational development of the visually impaired adolescent may have been traditionally underestimated and that the documented unsatisfactory vocational outcomes for the group as a whole may to a large extent be attributed to a lack of suitable vocational training facilities and to inadequate development of careers into which the visually impaired can enter. If this is the case then the time has come for a national organization of programs to (a) carry out more forthright and massive campaigns to combat widespread negative attitudes toward impairments, and to visual impairment in particular: e.g. English's (1971) "Action Methodology"; (b) act upon recommendations such as those put forward in the report "Planning services for the blind in the decade of the '70's" (Mallinson & Blasch, 1973); and (c) establish an active body that will impartially monitor the overall success of the vocational rehabilitation of the visually impaired and will also initiate strong action to promote employment of the visually impaired through local legislation and international cooperation.

Surely it is time for us to increase greatly our efforts to ameliorate a long-standing problem through concerted and

(Continued on page 319.)

A Pilot Course to Assist Blind Potential Teachers

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Abstract: *A pilot three-credit course for blind students considering becoming teachers was offered by Illinois State University in cooperation with the Illinois Division of Vocational Rehabilitation. The goal of enhancing the probability of the students' successfully entering the teaching profession was pursued through practicum experiences, a Practical Approaches Laboratory, mock lessons, materials preparation workshop, lecture-demonstrations, mock interviews, conferences, and exercises in problem-solving.*

▪ Professional educators are not unique in being guilty of limited thinking. We assume that a thing cannot be done because we cannot imagine how it might be done, and usually that is the end of it. When someone asserts that not only can such a thing be done but he will do it, we call him foolish and close our minds. The blind person wishing to teach sighted children must contend with such limited thinking almost every time he seeks a position. Even as increasing numbers of blind persons are proving that sight is not needed for effective teaching, professionals are shaking their heads refusing to believe it is possible.

Today practical and attitudinal barriers are preventing many potentially competent teachers with sight impairment from obtaining teaching positions. In addition, these potential teachers are finding it nearly impossible to obtain useful information on approaches to problems they recognize they must face. A way is needed to bring together successful teachers who are blind with blind students who want to teach. There is also a need for a training program to fill in the serious gaps blind teaching aspirants encounter in their college preparation.

PILOT COURSE DEVELOPED Recognizing these problems, the National Association of Blind Teachers petitioned Illinois State University and the Illinois Division of Vocational Rehabilitation, Services for the Blind, to consider a course designed to assist visually impaired potential teachers to deal systematically and effectively with perceived barriers. As a result, the University agreed to offer a pilot course offering three semester hours of credit during the summer of 1974 with support from the Division of Vocational Rehabilitation.

The course, Instructional Techniques for Blind Teachers, was developed and made available specifically to teachers and potential teachers with visual impairment sufficient to eliminate print as a primary reading medium. This restriction in population was made under the assumption that qualifying individuals would face problems different in kind and more intense than those of legally blind persons having direct access to print material. Six students were admitted to the course.

The major question was: Could such a course significantly enhance the probability of teaching success for these individuals and the larger population of blind persons desiring to teach sighted youngsters? The course was developed to answer this question and to assist participants to meet the following objectives:

1) To extend their understanding of factors most vital to obtaining and retaining a teaching position.
2) To acquire the technology and methodology needed to eliminate practical barriers to success in teaching.
3) To attain the understandings and skills needed to cope with stereotypic and negative societal reactions to blindness and the person with severe visual limitations.
4) To develop confidence and mastery in the teaching-learning process through intensive practice of preparation and classroom skills.

A number of special features were designed to meet course objectives. Lecture-discussions zeroed in on anticipated problems. Practicum sites were individually arranged to give each student ample opportunity to practice his skills in the grade or subject of his choice. Conferences were regularly scheduled to assist students in the continual evaluation and re-evaluation of their progress. A Practical Ap-

> **"It is in this area [materials preparation] of teacher preparation that the potential for neglect appears greatest for blind students. Students entered the course with little knowledge of and no skill in the use of flannel boards, pocket charts, transparencies, or most other visual aids."**

proaches Laboratory was made available to assist students to counter deficiencies in such areas as mobility, handwriting, and social graces. Special experiences were planned in problem areas such as materials preparation and interviewing. Blind individuals who had successfully eliminated barriers and become respected teachers were invited to serve as guest lecturers.

The six students admitted were diverse in their backgrounds, interests, and skills. Some had experienced no formal interaction with children; others had had observation and participation experiences; one had been teaching 11 years prior to losing most of her sight. Major interests included two in education of the visually impaired and elementary education, and one each in physical education, French, music, and education of the mentally handicapped. Preparation in methods and other classroom skills ranged from none at all to excellent for the one student with teaching experience. All were placed with experienced teachers in the area of their choice except the French major who was placed in a history practicum because a site in French was not available. The physical education major transferred into an industrial arts practicum when his physical education placement proved not practical for his needs.

The course was offered from June 24 to August 15, 1974, and was taught by the author. Assisting him were Michael Thuis of the Illinois State University Special Education Department, practicum supervisors from Metcalf Laboratory School and University High School, and five blind teachers from California, Illinois, and North Dakota who served as guest lecturers.

Change followed change as the semester progressed. Mock lessons were extended from a minor to a major element. Several additional materials-preparation demonstrations were presented. Guest lecturers were invited to observe students in practicum situations and to share ideas with them and their practicum supervisors. Several lectures became braille handouts with opportunity provided for questions and discussion. Lesson plans involved many more than anticipated hours for both practicum supervisors and the course instructor.

More Flexibility Needed

It was soon obvious that less flexible aspects of the course needed modification. Both students and practicum supervisors suggested changes that they felt should be built into future offerings. All felt that the course was very valuable and should be offered again.

There was unanimous agreement that: (1) the course should be offered as a full-time workshop; (2) the practicum should be extended from one hour to a full morning; and (3) a pre-session orientation should be provided for both teachers and students. The students were taking courses in addition to this one and felt that they were not able to do justice to them. Although the course was offered with three hours credit, students worked many more hours than such credit would suggest in order to make the experience truly meaningful.

Practicum was arranged around other courses. While it was for all the most valuable part of the course, it fell short of its potential because the blind students could not participate in all aspects of the school day. It was also difficult for them to obtain the kind of observational data on which day-to-day decision-making is based.

Practicum supervisors felt a need for more orientation to blindness, to techniques students might be expected to acquire, and to needs, experiences, and goals of individual students. Students felt that a pre-session giving them full opportunity for orientation to classroom, campus, and community would have enhanced their experiences by allowing them to approach both practicum and classroom situations with full attention. A high level of mobility skill had been assumed at course origin but this proved to be fallacious. A pre-session for both students and supervisors could have eased problems.

All but one student voiced a need for more time with materials preparation. It is in this area of teacher preparation that the potential for neglect appears greatest for blind students. Students entered the course with little knowledge of and no skill in the use of flannel boards, pocket charts, transparencies, or most other visual aids. Several had not even considered the value of appealing to the visual channel. All made progress in overcoming this deficiency, and some achieved a good level of skill. More time would have definitely added strength, however.

LIVING ARRANGEMENTS IMPORTANT

All but one student also urged that housing arrangements be made which would physically separate course participants during evening hours. Because of the intensity of course experiences, close living arrangements led to tension and rivalries. These were destructive and could have been avoided through preplanning. The proximity of living quarters also resulted in a clustering of these blind students to the extent that the forming of relationships with sighted peers was adversely affected.

Five students and all practicum supervisors felt that methods courses should be a prerequisite to acceptance into the program. Four students would have liked more time for planning with their practicum supervisors.

Asked to rate specific aspects of the course, students unanimously selected practicum experiences as most valuable, followed closely by individualized practicum planning. Other aspects rated were, from highest to lowest, Practical Approaches Laboratory work with areas of personal deficiency, mock lessons for critical evaluation by participants and guests, materials preparation, lecture-discussions, mock interviews, guest instructor presentations and discussion, conferences, and exercises in problem-solving. The relatively low rating of guest instructors is surprising but not inconsistent with the pattern of assigning ratings in order of the involvement demanded of the students, from highest to lowest demand.

MAJOR CHANGES ADVOCATED It would be unreasonable to apply statistical measures to the data gathered on this small and, in many ways, atypical pilot group. It is reasonable to state that the six students made sizable, measured gains in confidence and skill. They were also better able to assess their own abilities and to judge the feasibility of pursuing teaching as a vocation. Some obvious changes in the course need to be made, especially in the selection of participants and in structural design; but the need for this kind of course has been well demonstrated.

The major changes advocated by the majority of students deserve serious consideration if the course is to be offered again. It should be a full-time experience with expanded instruction and practicum time and appropriate credit. Within this more optimal structure, fuller orientation could be offered both students and practicum supervisors, and individual needs in specialized areas could be met more adequately. Requiring methods courses as a prerequisite would assure a foundation on which a maximally useful experience could be built. Planned housing arrangements for participating students also merits deliberation.

Unanticipated Needs

Perhaps the most startling information yielded by this experience is the array of unanticipated needs the potential blind teacher of sighted children encounters. He needs more hands-on work with audio-visual materials, more deliberate introducing to common visual concepts, and more concentrated attention to nonverbal cues. Use of materials that require only casual attention for the teacher with sight must be tightly planned by the teacher who is blind. Eye contact with a roomful of students requires careful cultivation. Attention to individual class members involved in a variety of activities and situations at any particular time needs special concentration. These and many special demands on the blind teacher are not provided in most teacher-training programs, which rarely involve blind students.

A blind person may become a good teacher without any instructional attention to these needs. This is proved by the hundreds of competent blind teachers in public and private schools today; but many capable blind students in and out of teacher-training programs could profit from such instruction. The practical barriers to a teaching career are as real as the attitudinal barriers. A course dealing with both barriers can be a real asset to the blind instructor.

The intervention of this three-credit course was not entirely adequate for its stated purpose. In part, the teaching careers of graduates of the course will eventually tell us how adequate; of course, a multitude of extraneous factors, positive and negative, will cloud the impact of training.

Because the need is apparent and presently unmet for many potential teachers with severe visual impairments, it is essential that a second effort, incorporating proposed changes, be developed.

Vocational Development—*continued from page 316*

well-organized action. Without this we may well live to re-read Carroll's (1961) challenge that "the big job to be done is to initiate a positive program of public education. We have the means to begin *now*" (p. 133), and to see in that statement a contemporary relevance. Otherwise, at the same time, we may be settling down to read a thought provoking but strangely reminiscent document entitled "Planning services for the blind for the decade of the '80's" or (who knows?) "Planning services for the blind for the decade of the '90's."

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Placement and Employment of the Visually Impaired: State of the Art and Identification of Unmet Needs

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Mr. Link is the American Foundation for the Blind's specialist in placement and employment.

Abstract: *Describes vocational rehabilitation and other federal legislation that has opened up jobs for the blind and specific employment areas that have attracted visually impaired persons over the past decade or so. Reports the results of two surveys conducted to determine unmet needs. Results include the importance of upgrading the placement aspects of rehabilitation; providing blind persons with real work skills; early career education programs.*

■ Looking back over the history of vocational rehabilitation, one can be impressed with the measures taken to rehabilitate blind persons. The obstacles facing blind persons have been, and continue to be formidable, but certain milestones stand out. In 1935, Title X of the Social Security Act designated blind persons specifically for financial aid. The Randolph-Sheppard Act of 1936 permitted licensing blind individuals to operate vending stands in Federal Buildings. Through this act and the Vocational Rehabilitation Amendments of 1943, the state-federal vocational rehabilitation system initiated a landmark effort on behalf of blind individuals throughout this nation. This effort took the form of the development of programs in state after state which intensively emphasized the necessity of sound, practical vocational training combined with an active, deliberate, selective placement service.

The Wagner-O'Day Act provided for the Federal Government to make purchases from workshops for blind persons. The Barden-La Follette Act of 1943 provided specifically for rehabilitation services for blind persons. This Act for the first time provided vocational services to blind persons. It was especially significant because it authorized physical restoration services.

LEGISLATION INCREASED SERVICES Other legislation substantially increased authorized vocational and rehabilitation services to all handicapped persons; instituted extensive traineeship programs to insure the availability of well qualified professionals to rehabilitate the handicappied; provided for centers for adjustment to blindness; and established the National Center for Deaf-Blind persons.

The new Rehabilitation Act of 1973 and its amendments, which stress rehabilitation services for the severely impaired and specifically provides for services for older blind individuals, include a range of provisions which if successfully implemented can move our efforts to train and locate suitable employment for greatly increased numbers of blind persons.

The placement prospects for blind persons in Federal jobs have been given greater scope through the employment provision of Sect. 503 of the 1973 Rehabilitation Act. This Act has equally strong and far-reaching implications for the employment in the private sphere of the severely disabled, including blind persons. Specifically, the Act requires that any business or industry providing contract work for the Federal Government in the amount of $2500 or more, develop affirmative action plans for the employment of severely disabled persons. This Act may open doors into most of the corporate enterprises in America. Undoubtedly, vocational rehabilitation must be extremely cognizant of the employment potential inherent in this Act. It will also mean, of course, that rehabilitation personnel will place increased emphasis on the development of selective placement programs for blind persons as well as other severely disabled groups of individuals.

In describing the current state of the art in training and placement and future trends in the employment of blind persons, an examination of past performance will serve to put the current situation in perspective and indicate the direction of future trends.

This article is based on a paper delivered by the author at a meeting of the American Foundation for the Blind National Committee on Placement and Employment, March 18, 1975, in New York City.

During the past decade, the number of blind individuals moving into the competitive labor field has doubled. For the fiscal year 1974, 6,500 visually impaired persons were rehabilitated and placed in competitive employment. Of this number, 15 percent secured professional, paraprofessional and managerial type employment; 15 percent clerical; 20 percent service; 3 percent agricultural; and 47 percent manufacturing.

It is estimated that for fiscal year 1975, State agencies will serve about 25,000 blind people in their active caseload. Based on past statistics, about 25 percent of the state-federal caseload is rehabilitated for competitive employment. Reports, however, show that presently there is a drop of about one-third in the number of cases to be placed in competitive employment as compared to previous years. This is probably due to the unemployment crisis.

WORK-AGE BLIND IN U.S. Currently, there are 8,000 blind students in junior and senior high school, 4,700 students attending college, 2,100 in clerical training programs throughout the country, and 2,000 persons in rehabilitation centers receiving adjustment to blindness training. The Federal Office of Blind and Visually Handicapped (OBVH) estimates that there are 40,000 newly blinded individuals each year and that at least 10,000 of these have a potential for vocational rehabilitation.

It is difficult to delineate the costs of rehabilitating blind persons for competitive employment. However, the figure of $5,000 per client as an average caseload cost for all services provided to blind persons, may be used as a guideline.

Estimates of the number of the visually impaired who are currently in the labor market range from 20,000 to 66,000 persons. OBVH arrived at this latter figure by estimating the number of blind persons rehabilitated and placed in competitive employment by State Services since 1967. OBVH also estimates that about 40 percent of the 66,000 blind persons who are currently employed are functioning as totally blind persons.

Professional Occupations

Even before the inception of the Vocational Rehabilitation Program, blind persons proved their ability to perform on a competitive basis in professional occupations. However, it has only been in the last ten to 15 years that blind persons have been employed in a wide variety of occupational careers.

For example, in 1963, few visually impaired persons were employed in the computer sciences. Due to the efforts of RSA in setting up a demonstration in the selection, training, and placement of computer programmers, now over 600 visually impaired persons are employed in data processing activities. In the 1960's, states began to amend their legislation to allow blind persons to obtain teacher's certificates. Now there are more than 500 blind teachers teaching in all grades throughout the country. Today there are more than 400 blind lawyers in government involved in legislation and research.

The placement process was given considerable impetus in 1968 when the State and Federal Vocational Rehabilitation and Internal Revenue Service initiated a program for the selection, training, and placement of qualified blind persons as taxpayer service representatives. The Social Security Administration accepted blind persons and finally, in 1973, a program was initiated to train blind persons for the Federal Civil Service Commission. Now, over 300 persons have been successfully placed in information service expeditor positions in the federal government.

The greatest progress in providing job opportunities for visually impaired persons has been made with medical transcription. Other kinds of professional employment competitively performed by blind persons include technical writing, chemistry, electronic engineering, management analysis, personnel, etc.

We do not anticipate a decrease in employment opportunities for blind persons in the professions. However, we do anticipate and in fact are now finding, tremendously increased competition for each professional opportunity. On the other hand, other occupational areas are emerging which will have an influence on the employment of visually impaired persons during the next several years.

An exciting prospect is seen in the fact that one of our nation's leading medical schools, Temple University, has accepted a totally blind medical student, who is now in his third year of study. Although this necessitated a number of adjustments in the medical curriculum, both the school and the blind student are confident that he can obtain his objective of receiving an M.D. degree and becoming a psychiatrist.

Paraprofessional Occupations

The paraprofessional occupations appear to offer the greatest number of opportunities. Now underway is a demonstration program in the training and placement of blind persons in specific allied health occupational areas such as occupational therapy assistant and physical therapy assistant.

Other significant progress in the placement and employment of blind persons includes: increased numbers of persons working in government; a program of selective placement, particularly for the severely disabled, established by the Civil Service Commission; and, reading or recording services for blind individuals made available for Civil Service Tests.

The Randolph-Sheppard Act, first passed in 1936, a landmark action with respect to the training and employment of blind persons in the United States, heralded the development of one of the most highly successful business enterprise programs offered any disabled group in our nation. By fiscal year 1974, this Act provided employment to over 3,700 blind persons with an average income of $7,900 in vending employment in federal buildings and other locations. More than 500 persons enter this occupation each year, and their average annual earnings are continuing to rise. The new 1974 Amendments to the Randolph-Sheppard Act represent another giant step forward in the area of business enterprises for blind persons.

It should be pointed out that sheltered workshops are also a source of remunerative employment for a significant number of blind persons who do not have the aptitude and ability for competitive employment. Present estimates indicate that there are about 30,000 multiply handicapped blind persons who could benefit from employment in such a workshop. Currently, workshops are serving about 6,000 persons.

To conclude this section on the current state of the art, the Affirmative Action program, Section 503 of the Rehabilitation Act of 1973, will no doubt lead to the employment of qualified impaired individuals. This program applies both to initial employment and to what takes place after the person is hired—job assignments, promotions, training, transfers, and working conditions.

"Efforts should be made to gain maximum acceptance of placement as a fully professional commitment and function of both the agency and individual staff members."

Also, the recent developments in the areas of sensory aids development, low vision centers, career education, rapid reading in braille, improved legislation for blind persons—and a strong emphasis on working with visually impaired persons in new ways, especially the concepts of outreach, advocacy, and the involvement of consumers, will no doubt enhance employability for blind persons and open up more employment opportunities.

The American Foundation for the Blind has conducted two surveys over the past several months. The main objective of these surveys was to identify the special problems or barriers rehabilitation staff encounter in providing effective training, placement, and employment services for blind persons and to identify the unmet needs in these areas.

For the *first survey*, I chaired regional meetings with selected representatives from state and voluntary agencies in Denver, Chicago, Atlanta, Washington, D.C., New York City and Boston. The purpose of these meetings was to have the participants, who were for the most part staff responsible for placement and employment, identify special problems and unmet needs they are encountering.

The *second survey* was the mailing of questionnaires to 93 state and voluntary agencies serving blind persons, requesting agency personnel to identify unmet needs in promoting effective training, placement and employment services.

Survey Results

Following are the results of the regional meetings. The following special problems and barriers kept recurring at the regional meetings in such frequency as to constitute consensus:

1. Two major special problems that have worked as a deterrent against greater achievement in placement and employment of blind persons were: too heavy caseloads (a manpower problem) and "closures" (a procedural matter). It was emphasized that as long as closures remained a yardstick of effectiveness for rehabilitation personnel, this "numbers game" would work against effective vocational rehabilitation.

The current functional job demands of state and voluntary agency rehabilitation counselors are multiple. His coordinator activities, those of counseling, evaluation, and community relations, have all contrived to make it difficult for him to spend much time on job development, job solicitation, job placement, and post-employment counseling.

THE NUMBERS GAME

Concern was expressed regarding greater emphasis being placed on homemaker and unpaid family worker rehabilitations, rather than on training and counseling of blind individuals for competitive employment. It was strongly felt that the "numbers game" has to be played for job justification and survival. HEW Representatives at these meetings, however, pointed out that no state agency has ever lost a single dollar, based on the numbers or maintenance of the quantity of rehabilitants. Rehabilitation personnel questioned the reality of this.

2. The overwhelming concern for increase on caseloads of multiply handicapped blind persons was widely evident. It was felt that a sizable segment of the multiply handicapped visually impaired population is not receiving services commensurate with their needs. It was felt that too much concentration on the severely disabled will reduce the overall number of rehabilitations across the country. Severely disabled clients spend longer times in the pipeline, and the longer periods of time necessary to effect a rehabilitation further complicate the situation, especially if there is an attempt to play the "numbers game."

Are Workshops Viable?

3. Increasing concern for the greater use of sheltered workshops for the severely visually impaired was expressed. Questions posed ranged from: "Are workshops still a viable source of employment?" to "Should the concept be changed to that of a work activity center and provide work to supplement benefits such as Social Security Insurance (SSI)?".

4. The underdevelopment of the personal, social, and vocational skills of blind children and young adults seems to be so prevalent and so serious that many of them can only aspire to marginal employment. They are static both in job advancement, job mobility, and in earnings.

5. There appears to be a lack of confidence by rehabilitation workers and organizations serving blind persons and the blind persons themselves about the latter's capabilities for competitive employment. This, combined with the employers and the public's lack of faith in the "abilities of blind persons," is a major barrier to employment, upgrading, and promotion.

PREVOCATIONAL SERVICES

6. It was firmly stressed that prevocational evaluation and training services should be strengthened. Blind clients are referred to rehabilitation or placement counselors for job placement, and in many instances, they do not have a realistic understanding of the world of work nor are they ready for employment. More often than not, because of current rehabilitation regulations, a young adult must choose a career very early in life. The question posed was: "How can a young blind person, without real knowledge of adult occupations, make such a choice intelligently? If he does make a choice, does it limit his other educational and training opportunities because they are not practical?"

7. Cited as a national problem is Social Security Insurance and Social Security Disability benefits which discourage blind persons from searching out and sustaining themselves in employment. The fear of losing disability and Social Security benefits appears to be particularly significant in sheltered workshops because of the concern over losing benefits because of increased income, and the difference between earnings and SSI benefits are not attractive enough to provide positive motivation for employment, either in the sheltered workshops or competitive industry.

UNMET NEEDS The following unmet needs kept recurring at these regional meetings in such frequency as to constitute consensus:

1. The need for demographic studies and research action projects was strongly suggested. Hard data are lacking about the distribution of blind population by states, age groups, nature and extent of blindness, number underemployed, scholastic level, vocational potential, and present vocations of visually impaired persons. Also needed is analysis of future demands for labor and occupations feasible for groups of blind persons. Resulting facts would pinpoint areas for concentration in the delivery of effective training, placement, and employment services.

2. An unused resource for further education and training of blind persons are the vocational and technical schools throughout the country. Few blind students are enrolled in these community resources.

3. Many skills are required to provide effective training, placement, and employment for blind individuals. These include: salesmanship, knowledge of various occupations and industry, job analysis and job restructuring, projections of occupations in the labor market, industrial personnel policies and regulations, sensory aids considerations, etc. Since counselors who are responsible for the placement of clients generally do not have all these skills, it is imperative that resources be made available to educate and up-date placement counselors so they can fulfill their objective of adequate placement and employment of their clients. The need for more technical assistants or consultants, such as engineering personnel, for rehabilitation staff was strongly highlighted.

4. Expressed in various ways by the different regional groups was the opinion that more attention should be given to training counselors and placement personnel in the skills and techniques necessary to meet the present-day placement and employment demands of competitive industry. Efforts should be made to gain maximum acceptance of placement as a fully professional commitment and function of both the agency and individual staff members. It was suggested that any consideration of placement on a lesser basis implies too limited a concept of this agency function.

Placement Is Professional Work

Until placement work is given professional recognition and training on the graduate level equal to that of rehabilitation counseling and work evaluation, the severely impaired individual will continue to lack the necessary professional assistance in attaining an appropriate job.

It was also proposed that placement techniques and methodology, especially related to business and industry, be incorporated into Master degree programs in rehabilitation. It was further suggested that we strengthen the training in placement by having, for example, the placement training program presently conducted at Southern Illinois University extended to other urban areas.

5. Regional participants felt that there was a real weakness in the area of evaluating clients for employment. One of the essentials of placement is knowing whether or not the client can perform in certain job positions, and if so, specifically what are the client's skills. The question was posed: "If it were truly felt that the rehabilitation counselor was not fully cognizant of the manpower demand in industry, how then could he adequately evaluate the abilities and capabilities of blind persons for jobs?"

TAPPING RESOURCES 6. There was unanimous agreement that we were not really tapping resources available today from legislation and funding, work education, cooperative education, manpower training programs, such as CETA, and the many additional programs that are designed to provide either more effective vocational education or employment training. There needs to be more of a concentrated effort in enrolling blind persons in these resources, but the question was posed: "Who is to perform this?"

7. There is a need to provide realistic and intensive follow-up and on-going services to the blind person who is either placed in a training situation or in employment. Adequate follow-up provisions would enhance the blind person's ability to sustain employment or successfully complete a training program, and may provide more job upgrading and job promotion for blind people employed in competitive industry.

8. Participants pointed to employer resistance as one of the greatest barriers to the employment of blind persons. On-going efforts, and not the usual casual efforts, should be made to involve to a greater extent the news media, business interests, and civic organizations and to focus on programs fostering a more positive attitude toward employing blind persons.

9. More emphasis should be placed on providing the blind client with training in adequate coping skills, daily living skills, and interpersonal skill development in addition to their technical and job training experience. Too often, the college graduate, even though he successfully completes his BA degree, does not have skills needed to secure and keep a job in line with his interests and abilities.

Other special problems and unmet needs identified by regional participants which did not appear to provide consensus are as follows:

1. Concern was expressed at the practice of "stereotyping" jobs by rehabilitation workers. More and better research in all areas of rehabilitation of blind persons, especially in placement and employment areas, would lead to a more positive approach for job placement.

Realistic Education for Work

2. Strengthening of curriculum in the school system in the areas of career education and world of work reality is essential. Because educational and vocational requirements are becoming increasingly higher for entry into jobs and for promotion, the blind child and young adult must receive a more solid educational and vocational foundation.

3. There is a lack of knowledge of resources where technical information or technical equipment may be available to meet training or employment needs of blind persons. This information should be provided to rehabilitation counselors and especially to blind persons.

4. Because of rapid technological advances in business and industry, the practice of relying on personal contact with individual employers by the rehabilitation counselor on behalf of one client may no longer suffice. Employer approaches may have to be replaced in large measure by systematic multiple placement arrangements through other agencies and organizations.

5. The business enterprise program continues to offer one of the best opportunities for managerial-type employment. However, in addition to vending stand activities,

there should be further exploration in terms of allowing blind persons to look into, and possibly engage in, other kinds of enterprising situations.

Training Packages for Counselors

6. There is a need to develop training packages for rehabilitation personnel which might include such areas as salesmanship, job analysis, how to perform a job survey, how to work with vocational instructors in vocational education systems, etc.

7. There is a need to educate and train college faculty and vocational education instructors for the purpose of having them enroll more blind persons in their programs.

8. Heavier emphasis needs to be given to achievement of higher aspiration levels by blind individuals. Their aspirations appear too frequently to be inadequate.

9. We need to have more consumer input as to the value of the services offered to blind persons, and also, an identification by blind consumers of their real needs in the areas of training, placement and employment.

10. We need more of a commitment by management of federal, state and voluntary agencies, if placement and employment under the new Rehabilitation Act is to be given high priority.

A PLACEMENT NEWSLETTER 11. It was recommended that a periodic newsletter on placement and employment be utilized to describe successful rehabilitation programs, experiences of successful blind persons employed in competitive industry, new career programs, and training facilities now available for blind persons, etc.

12. State and voluntary rehabilitation organizations should maintain a diligent follow-up service to study the effectiveness of career education programs and skills of daily living programs and vocational exploration programs with prompt feedback to the schools so they could provide programs of maximum effectiveness.

13. Regional conferences on the future of workshops should be held. Based on the results of regional meetings, a national conference could provide a forum for the discussion of the future of the sheltered workshop.

14. We need better vocational assessment tools.

15. More and better programs in assisting blind persons in developing job-seeking skills are needed.

Working With Labor Unions

16. We need to work more closely with labor unions to convince them that blind persons can competently perform many of the jobs within their industries.

17. The actual role of vision in various occupations needs to be studied as job counseling for blind persons on this analysis.

18. Analysis of occupational possibilities for the aged, multiply handicapped, and less capable blind people should be considered.

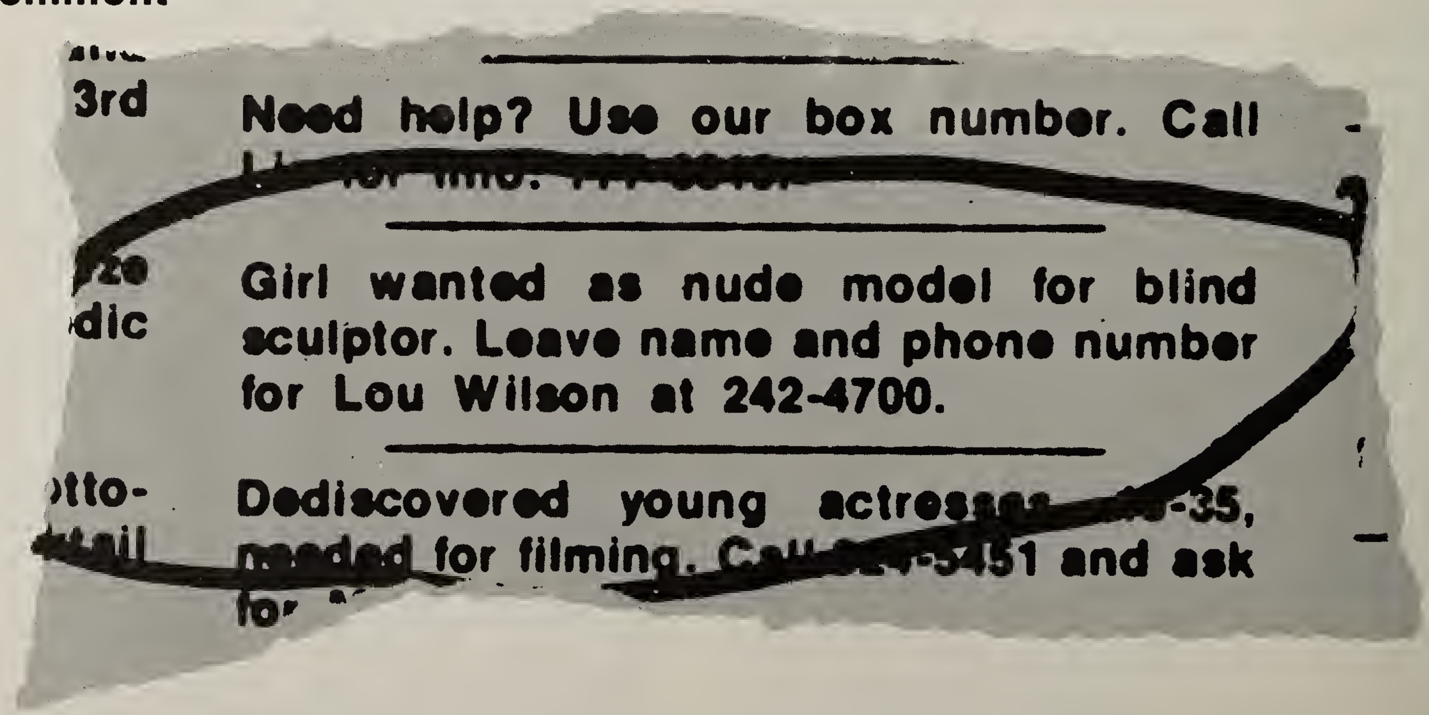
19. There is a lack of communication between the policy and decision makers and the rehabilitation staff who have to provide the services. Management does not understand our problems. It was strongly suggested that AFB meet with federal, state, and voluntary directors to share with them the special problems and unmet needs identified by rehabilitation staff during these regional meetings.

These, then, are the recurring and non-recurring special problems and unmet needs as identified by rehabilitation workers in the field of blindness.

Now, a few comments about the other survey. In August of 1974, a 40 item open-ended response questionnaire related to identifying unmet needs in the training, placement, and employment of blind persons was mailed to 50 state agencies, Puerto Rico, Virgin Islands, Guam, and the District of Columbia, and 43 voluntary agencies in the United States serving blind individuals.

A 50 percent return of the questionnaires was obtained. Data analysis revealed little difference among the responses given by the state agencies and the voluntary agencies. The analysis of data showed overwhelming agreement with both the recurring and non-recurring special problems and unmet needs identified by the participants at the regional meetings.

No Comment



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—*The Gramercy Herald*
New York City, June 27, 1975

Review

Sun and Shadow, by Rose Resnick. New York: Atheneum Publishers, 1975. 320 pp. $10.00

Reviewed by Benjamin Wolf

It is not unusual for persons approaching the zenith of their careers to feel impelled to write the story of their lives. If such efforts are to become more than exercises in self-indulgence, and are to command the attention of the reading public, they must contain two ingredients: an interesting life experience and the ability to tell it lucidly, with a sense of the dramatic.

Sun and Shadow contains an ample quantity of both. It is the kind of reading that one finds difficult to set aside until the very last page. And then one puts it down reflectively, with quiet satisfaction.

Rose Resnick came from an immigrant family, one of eight children, raised in the teeming east side of New York. She probably realized much later, as does the reader, what a blessing such a setting was for a precocious and intelligent blind child. Through a loving mother, an oftentimes morose and difficult father, and a brood of siblings with a varying range of emotional relatedness to her, Rose obtained a microcosm of life with all the necessary emotional nuances that is solid preparation for a mature, independent, and realistic life style.

In addition there was the New York Lighthouse. Here, too, she encountered people who cared. Interestingly enough it was not the so-called survival skills, such as mobility skills, self-care or communication skills that Rose remembers learning as a child. Rather it was the opportunities for dance, music, dramatics, swimming, the exhilarating joys of physical activity, and the stimulating exposure to outdoor living provided by a camp experience arranged through a benefactor of the Lighthouse. Above all it was the loving and supportive relationships provided by people who obviously saw in Rose a promising, alert, and talented child.

These two milieus, her family and the Lighthouse, created in Rose Resnick the self-esteem and sense of personal worth that she carried with her throughout her hectic, never dull, but sometimes frustrating, life experiences. Throughout she never attributed her difficulties to her blindness. Always, although not in a self-pitying or paranoic sense, it is the unreasonable attitudes of a sighted society that is the cause of her frustrations.

Sun and Shadow contains some interesting insights as to how one blind person adjusted to the world of sight. Time and again associates are described in a strictly visual fashion. A camp counsellor, who is outgoing, warm, and likeable has blond hair, blue eyes, and a twinkling smile. Someone else is square-jawed and bulky with shifty eyes.

For someone who lost all sight by the time she was five years of age, Rose Resnick's sense of the physical world, including the flora and fauna of nature, is rather remarkable. Of course, she takes advantage of what sighted people tell her or what her fingers reveal. However, what is significant is not the complete authenticity of her physical descriptions, but what she visualizes based on what her senses and emotions tell her.

There are times when the author discusses her dreams. Here again there is a good deal of visualization, but, just as in the case of sighted persons, it is the emotional configurations that create the true impact. There is a very touching and charming description of a romantic and emotionally satisfying interlude spent with an intimate friend and teacher in Yosemite National Park. After a sentimental parting, Miss Resnick dreamed of the day's satisfactions which culminated in the two of them "reaching toward each other with only our fingertips touching." For to Rose Resnick her fingertips are not only a door to the world, but a vehicle for one of her greatest satisfactions, her piano artistry.

Sun and Shadow is more than just the story of a blind woman. Rather it is the story of an interesting, inspiring human being who learned to overcome handicaps, endure agonies, exhilarate in moments of happiness, combat frustrations, and relish accomplishment. It is a story told with intelligence, verve, candor and, notwithstanding occasional touches of acid, with basic good humor.

Mr. Wolf is a regional consultant for the American Foundation for the Blind.

Not All Little Wagons Are Red: The Exceptional Child's Early Years. Edited by June E. Jordan and Rebecca F. Dailey. Reston, Virginia: Council for Exceptional Children, 1973. 191p. $8.50

Reviewed by Geraldine T. Scholl

This book reports the results of an "invisible college" conference on early childhood education and the exceptional child. The invisible college is a technique employed by the Council for Exceptional Children Information Center to identify current developments in a specific aspect of special education and report innovative and promising practices to the field. Telephone interviews of key leaders are conducted, then a small committee of planners is appointed to design and conduct a conference of persons involved in the forefront of knowledge in a particular area.

The conference planners were James J. Gallagher, director, Frank Porter Graham Child Development Center, University of North Carolina; Bettye M. Caldwell, University of Arkansas; and Merle B. Karnes, University of Illinois. Ten participants selected for their expertise in early childhood education and/or exceptional children comprised the conference group. Papers and discussions are grouped under five broad topics: Rationale and Historical Perspective for Early Intervention; Identification of Children Needing Special Help; Program Models and Resource Materials; Training of Personnel; and Initiating and Implementing Change.

The first section, *Rationale and Historical Perspective for Early Intervention,* includes two papers: "The Importance of Beginning Early," by Bettye M. Caldwell, and the "Educability of Intelligence: Start with Young Children," by Samuel A. Kirk, presently of the University of Arizona. Both are extremely informative and set the stage for the remainder of the book. The background information presented is valuable for the student as well as the professional. Both authors emphasize the environmental factors of importance in working with young handicapped children and the need to look at and plan for the total environment, not just the time a child is in a formal program, which may be only a small fraction of his total day.

Two papers are included in the second section, *Identification of Children Needing Special Help.* In "Increasing the Lead Time for the Preschool Aged Handicapped Child," William K. Frankenburg, of the University of Colorado Medical Center, emphasizes that screening must be done prior to the critical period, after which remediation may be less effective. He proposes a model for determining whether selected common diseases or handicaps meet the criteria for screening. One point he stresses is that screening should not be confused with diagnosis and that labels should not be attached to children as a result of the screening process. William F. Brazziel of the University of Connecticut in "Teachers for Little Children Who Are Exceptional" cautions further about the dangers of labeling and dumping. He recommends that in addition to revamping school testing programs, all but the most severely handicapped should be kept in regular classes. This practice of course means that a massive in-service education program for regular teachers must be undertaken. Brazziel also discusses the problems of bilingual children and suggests that American schools follow the pattern of those in Europe where children proceed through school as fluent readers and speakers of two or more languages. He closes with the warning that the public wants results from education and not further analysis or "hand-wringing."

The third section is entitled *Program Models and Resource Materials.* Merle B. Karnes in "Implications of Research with Disadvantaged Children for Early Intervention with the Handicapped" summarizes research on early intervention and traces the development of early childhood education programs both for normal and handicapped children. The major portion of her paper is devoted to a summary of her own extensive research in the area, including a comparison of her intervention model with four others. She closes with a discussion of characteristics of successful programs, descriptions of various delivery systems, and some cautions about ending intervention programs too early. She includes an extensive bibliography which should be of special interest to students. Community (citizen) and parent involvement in educational programs for young children is dis-

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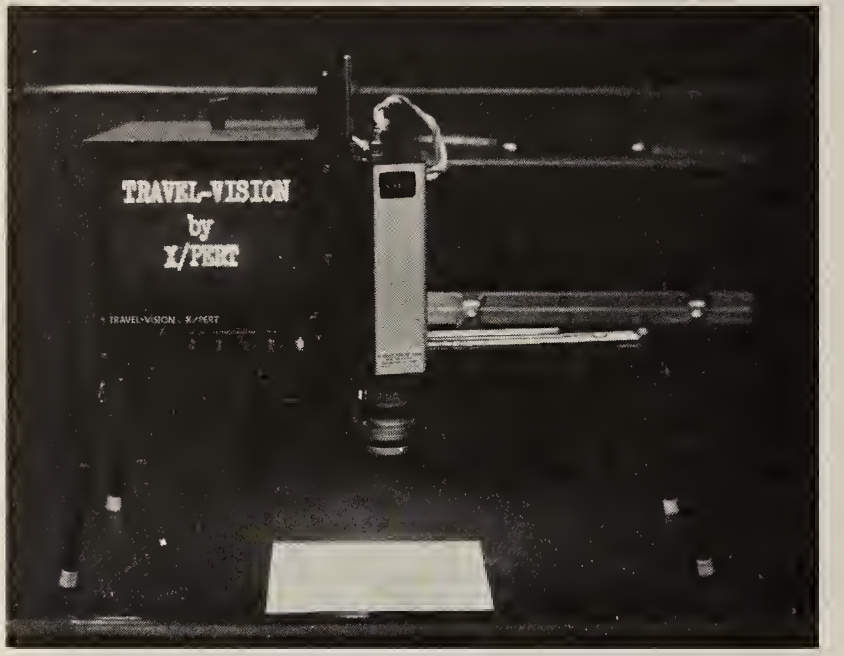

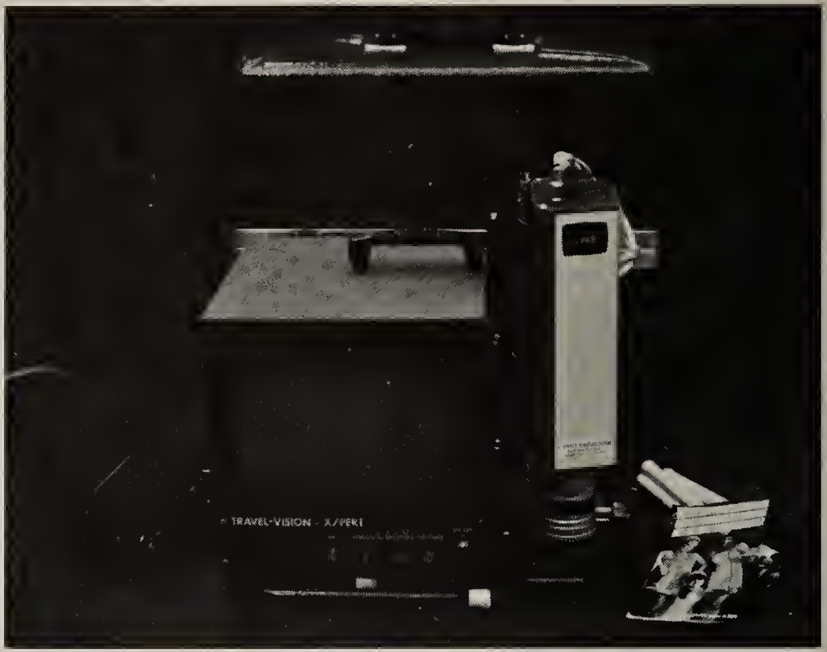

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cussed by John P. Ora of George Peabody College in "Involvement and Training of Parent and Citizen Workers in Early Education for the Handicapped." Ora presents an interesting proposal that the role of special educators should be considered as middle management personnel. He suggests that in education the lack of technology has prevented any rise in the productivity which is being demanded by today's citizens. To fully develop and utilize technology, massive infusion of monies would be required, which he does not see as forthcoming.

William J. Meyer of Syracuse University discusses the activities of the Syracuse University Early Childhood Education Center in his paper, "An Early Childhood Education Center with a Developmental Approach." He describes an observation schedule which is coded so that through a child's behavior a determination of the extent to which objectives have been achieved (as well as the need for modification in materials and activities) can be made. He also presents data on another center-developed instrument to assess cognitive competency. Ronald K. Parker, in "Child Development/Day Care Resources Project—New Materials to Aid Day Care Programs," lists materials, monographs, handbooks, and other resources which were compiled as part of his project. He is vice-president of Research and Evaluation, Educational Day Care Division, Universal Education Corporation. In the last paper of this section, "Planning and Evaluation," James J. Gallagher presents some guidelines for evaluating programs together with meaningful illustrations that should be helpful to those faced with the task of program evaluation.

The fourth section is devoted to *Training of Personnel*. The first paper, "Training, Its role in a Comprehensive Day Care System," by David C. Whitney of the Universal Education Corporation, describes a preservice and subsequent in-service training component in the comprehensive day care system. The author then shows how the training was put into practice in the Georgia Comprehensive Early Childhood Development Program. Jasper Harvey of the University of Texas at Austin, in "Training: The Development of a Handbook for Training Facilitators," summarizes the training activities of the staff at the Exemplary Early Childhood Education Centers which culminated in a series of publications that should be very useful to those initiating and implementing programs in early childhood education. A listing of those materials is included at the end of his paper. The final paper in this section, "Training, the Need of Getting it all Together," is by Donald J. Stedman. Dr. Stedman is with the Frank Porter Graham Child Development Center. He proposes that both vertical and horizontal linkages are needed between programs in order to maximize communication. He states that the system needs "dippers," "shuttlers," and "throwers," but current training programs prepare candidates to assume only one of these roles. He then describes the training of a specialist who would be able to perform all three.

The final section, *Initiating and Implementing Change,* includes two papers. David M. Jackson, associate superintendent, Illinois Office of the Superintendent of Public Instruction, in "Implementing Change: Public Involvement in Planning for Early Childhood Education in Illinois," describes how his state embarked on a massive effort to obtain citizen input in order to determine new directions for education. He details the procedures employed and then presents the resulting objectives and strategies for early childhood education for handicapped and gifted children. In the last paper Gallagher summarizes in "The Psychology of Planned Change" some of the problems and causes of resistance to change, particularly when the change is directed toward introducing into public schools something as foreign as the education of young children. He suggests the use of the Technical Assistance Development System model as developed at the Frank Porter Graham Child Development Center to facilitate the process of change.

The book has an interesting title but the subtitle, "The Exceptional Child's Early Years," may be misleading. The book is really not about children, but programs. It would seem to be most useful to administrators who are on the planning and implementing end of early childhood programs. On the other hand, it has many fascinating pictures of children in all types of settings and activities. Perhaps it is good for administrators to have such pictures to remind them that children are the *raison d'être* for programs. Actual art work of young children is also included.

The format of the book is interesting but not always consistent. Key ideas are presented at the beginning of each paper in the first three sections and these are helpful for the busy professional who is interested in scanning. However, no key ideas were included for papers in the last two sections. Throughout the book, sentences lifted from the text are included in the margin. This may be distracting for the compulsive reader and wasteful of time since the same material appears twice in close proximity. Again, the busy professional could abstract a good summary of content just through reading the marginal sentences, were it not that some sentences selected do not give the key concept in the paragraph and sometimes lists of important points include only one or two items. Thus the reader of the marginal sentences would not gain all that might be possible if the technique were followed consistently. This format could well be adopted for future publications provided the sentences were key ideas.

On the whole, the book should be useful for those interested in early childhood education and particularly for administrators. The resources listed and the bibliographies included with most of the papers should also be helpful. As more early childhood programs for handicapped children are developed, CEC may wish to supplement this book with another describing in detail actual programs to illustrate that not all little wagons do need to be red.

Dr. Scholl is professor of education in the School of Education, Program of Special Education, The University of Michigan, Ann Arbor.

Comment

A special forum for individuals to respond in detail to material published in the New Outlook for the Blind *or elsewhere, to present new ideas, or to raise issues which relate to the specialized field of work with blind and visually handicapped persons. Contributions should be 350–1000 words in length.*

Your Local Service Center

William M. Winkley

Moving from work with a state agency serving blind people to a private rehabilitation center has been challenging, enlightening, sometimes frustrating, but always exciting for this worker. My personal biases and attitudes have changed almost as radically as has the role of the workshop in the overall picture of rehabilitation services for the blind.

Clients and counselors are making more and greater demands on the shops, and in most instances the shops are responding. The typical chair-caning, broom and mop winding shop is hard to find today. The old converted residences that traditionally have housed the "Lighthouses" are being replaced by sleek, new buildings, housing sophisticated programs of service.

Certainly one of the greatest reasons for this expansion and upgrading of services has been the national emphasis on serving the severely impaired population. Successful placement programs are taking many of the more capable workers out of the various shops, making room for persons who are multiply and severely impaired.

In the past, many of those in the latter category were considered non-feasible for services and were overlooked by rehabilitation agencies. Today, partially as the result of more sophisticated evaluation procedures and the availability of 18 months extended evaluation, these people are being certified for rehabilitation services.

The local rehabilitation centers are being considered not only as potential placement facilities for these clients, but are also expected to share in the evaluation process. Work evaluation, prevocational training, work adjustment, and on-the-job training are becoming familiar services for the workshops. The very term "workshop" is restrictive and really no longer appropriate for many programs.

For increasing numbers of severely and multiply disabled blind persons, private rehabilitation centers are becoming multi-service centers offering a large spectrum of quality rehabilitation services. Whereas in the past, their primary function was to provide sheltered employment to a

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few blind persons, today services are appropriate for almost all blind persons.

Certainly the vocational evaluation and training programs can start or direct a person toward the right vocational pursuits. Orientation and mobility training is needed by many blind persons, even those who have had previous training. Brush-up training plus adaptation of skills to the home and work environment are often critical needs.

The rehabilitation centers are meeting many of these challenges and have others ahead of them. The close partnership with state rehabilitation agencies is critical if this growth and refinement is to continue. State agencies are purchasing services for clients from these facilities and, as a customer, are increasing their demands for quality services.

The directors of the local centers are faced with a very unique situation in managing their shops. Largely as a result of the effectiveness of National Industries for the Blind, shops are taking on new products that require more sophisticated equipment and fixturing (i.e., adapting a machine to be operated without sight).

On the other hand, they are challenged to produce these goods and services with their stringent specifications using, in many instances, marginal workers. And they are meeting these challenges with success. Some shops have even become self-supporting, requiring no subsidies.

Special certificates to pay sub-minimum wages to marginal workers are available from the Department of Labor. Shops are using these certificates to employ two or three workers in the sheltered environment to produce at a level equal to the work of one able-bodied worker in competitive employment.

Work activity centers, in which piecework rates are paid to low producers, have sprouted up in many programs. People who have sat alone in back rooms for years are suddenly finding themselves living lives filled with work, friends, responsibilities, and an occasional pay check.

The expansion and refinement of services offered by local rehabilitation centers and the attitude of cooperation between the state and private agencies are resulting in better quality services for the severely and multiply impaired population. We are now seeing these people taking their places among the ranks of the employed.

Mr. Winkley is the executive director of the El Paso County Association for the Blind, Texas.

A New Deal for the Blind

Paul E. Thiele

The investigation being conducted by the British Columbia Workers' Compensation Board is rather symptomatic of happenings all over the country where organizations outside of the traditional agencies for the blind, which have to date been the all-powerful influence in the everyday life of Canada's blind and sight restricted, are conducting investigations, studies, or simply taking over services and roles which had formerly been performed by the private agencies.

Most encouraging among these changes is the shift in attitudes by community, provincial, and federal governments. In a number of significant areas these administrative bodies are recognizing their responsibilities towards the blind, extending them the same services as are available to all other taxpayers and citizens.

In several large cities, welfare administration, which traditionally has been performed by the blind agencies, is now administered by the municipalities. Health and ophthalmological services, too, have moved in some instances from the agencies to community clinics and hospital outpatient departments, where professional staff can look after the problems with the latest medical knowledge and apparatus. In one province, the administration of residences for the elderly blind is now directly under the jurisdiction of the provincial government rather than the blind institute.

The most significant changes to date are the official assumption by almost all provincial education departments that resource materials for blind students can no longer be left as the sole responsibility of private charitable agencies which use groups of volunteers to produce texts and related materials which, for sighted students, are available in professional quality at the time they are needed.

The second is the move by the federal government's National Library in Ottawa to establish a nationally coordinated library service of recorded and braille materials and to extend this special media service to all handicapped persons who cannot use ordinary print.

The point to all this is that these developments should be regarded as highly positive and of great advantage to the blind. In these times of advancing technology and changing attitudes, it is of utmost importance to integrate the blind and other handicapped people into the regular processes of the country and into the mainstream of life.

Continued isolation of any group of citizens by private agencies which claim to take care of almost all the major needs and services required by these special people, could prove disastrous to the blind clients, no matter how good the intentions of the agencies are. From a purely practical and economic point of view, private, charitable agencies which depend on fund drives and benevolent donations simply do not have the resources and professional staff of government and community agencies.

The other important aspect is that by relocating blindness welfare, education, medical care, social work, and recreation in the regular community and government divisions which look after these areas for all people, a lot is being done to integrate the blind person into the regular life of the community. As someone has said recently, there are not more blind people in Canada today (in fact, statistically, there are fewer than there were 20 years ago); but they are more visible, coming out of their isolation, propelled by a more tolerant and better educated society into the mainstream of their community.

Ironically, boards and management of the traditional agencies view these changes not with enthusiasm but with behavior akin to alarm and panic. Agency personnel are opposing almost every step of progress, claiming that the agencies have a considerable investment in these services to their clients and that the loss of any of the services would mean a loss in status or corporate image or the general welfare of the blind clients, who would undoubtedly benefit more from a more community-oriented approach to service.

The private agencies are countering present government trends with expensive studies and surveys done by so-called experts. No matter how they are laid out, they still remain in-house investigations, and one suspects that their primary purpose is to prove that the agencies are capable of handling the job themselves and that governments and communities should merely pump more money into the private programs.

A lot of money and time could be saved by all if the blind agencies would recognize the benefits of the present trends and offer their full cooperation and support of proposed government programs. Neither their investment nor their corporate image would be affected. The only change would be some shifting in priorities and responsibilities.

Those of us who are to some extent outside of the scope of the traditional blind agencies can only urge the blind community to recognize that the present trend toward integration is of great value to them and to urge everyone to cooperate and contribute to undertakings such as the one proposed by the B. C. Workers' Compensation Board.

There is indeed a new deal shaping up for the blind—and for all handicapped persons in Canada—but we must do our part to step out of the relative comfort of isolation and be prepared to take on the obligations of ordinary citizens if we want to be treated like ordinary citizens.

Mr. Thiele is librarian and head of the Charles Crane Memorial Library, University of British Columbia, Vancouver. This is reprinted with his permission from Crane Library News, *January 1975.*

SUBSCRIPTION PRICE INCREASE

Effective October 1, 1975, the subscription price for the *New Outlook for the Blind* will be $11 a year, $18 for two years, and $27 for three years. Postage outside the United States and Canada is $1.50 additional per year. The subscription price applies to all three editions: print, braille, and recorded.

We regret having to increase the subscription price, but it has remained the same since January 1968—seven years of rising printing, paper, and postage costs. Even with the increase, the publisher, the American Foundation for the Blind, is continuing to absorb a considerable portion of the printing and mailing costs, as well as all of the editorial costs.

—The Editors

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Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Elaine M. Siegel, librarian.

Low Vision Care, by Edwin B. Mehr and Allan N. Freid. Professional Press, Inc. (5 N. Wabash Avenue, Chicago, Illinois 60602), 1975, 254p. $35.00. The authors, both optometrists, wrote this book after achieving much success in the treatment of low vision patients. Separate chapters deal with such issues as psychological and sociological factors, physiology of the abnormal eye, magnification, optics, the low vision examination, prescribing and counseling, contact lenses, optical and non-optical aids, and sources of low vision aids.

A Guide to the Care of Low Vision Patients, edited by Julian D. Newman. American Optometric Association (7000 Chippewa Street, St. Louis, Missouri 63119), 1974, 344p. $10.00. Full-length review appeared in the April 1975 issue of the *New Outlook.*

Oral-Aural Communications (OAC): A Teacher's Manual, by Glenn Sheffield Leavitt. Charles C Thomas, Publisher (301-327 East Lawrence Avenue, Springfield, Illinois 62703), 1974, 125p. $8.00. Full-length review appeared in the December 1974 issue of the *New Outlook.*

A Practical Guide to the Training of Low-Functioning Deaf-Blind Children, by Marcia J. Watson and Judith L. Nicholas. The Oak Hill School (The Connecticut Institute for the Blind, 120 Holcomb Street, Hartford, Connecticut 06112), 1973, 49p. $2.00. The authors, teachers of deaf-blind children, outline the responsibilities that parents, teachers, aides, and houseparents should assume to enhance the child's development. They propose behavioral objectives for training the child in such areas as discipline, body movement, toilet training, eating, dressing and undressing, washing, and social awareness.

Educational Evaluation of the Optacon (Optical-to-Tactile Converter) as a Reading Aid to Blind Elementary and Secondary Students, by Robert A. Weisgerber et al. American Institutes for Research (Post Office Box 1113, Palo Alto, California 94302), 1974, 178p. Report summarizes the research and demonstration activities of a two-year national study encompassing 112 blind students. Optacon instructional materials were developed and empirically tested, student selection procedures were established, and the extent to which instruction in ink-print reading with the Optacon can be accomplished by elementary and secondary school students was explored. A limited number of copies may be available from American Institutes for Research.

An Exploration in Braille Speed Reading; Report and Evaluation of the McBride Institute in Michigan. Michigan Department of Education (Special Education Services, Box 420, Lansing, Michigan 48902), 1975, sections individually paged. This report analyzes the Fourth Braille Speed Reading Institute, directed by Dr. Vearl G. McBride at the Lansing School for the Blind, Michigan, July 2-13, 1973. The Institute was funded under U. S. Office of Education P.L. 91.230 Part D, and conducted in conjunction with the Michigan Department of Education and a research team from Michigan State University. Sixteen participants, including 12 blind individuals, completed the Institute.

More About Rapid Reading for the Blind, by Winifred Downing. *The Braille Monitor* (National Federation of the Blind, 2652 Shasta Road, Berkeley, California 94708), June 1975, pp. 226–229. The author was one of 10 blind participants in a two-week braille speed reading workshop conducted by Dr. Vearl McBride in San Francisco, California, January 1974. She reports increased reading speeds for all participants, though not of the magnitude predicted by Dr. McBride.

How Speech Can Be Compressed and Expanded by Sidney L. Silver. *DB, The Sound Engineering Magazine* (Sagamore Publishing Company, Inc., 1120 Old Country Road, Plainview, New York 11803), Vol. 9, No. 4, April 1975, pp. 32–35. The author is in charge of sound and recording in the telecommunications section of the United Nations. His article discusses techniques (sample-and-discard, electromagnetic, and electronic) of speeding or slowing speech reproduction without distorting nuance or intelligibility.

The Effect of an Experiential Science Curriculum for the Visually Impaired on Course Objectives and Manipulative Skills, by Nancy L. Struve et al. *Education of the Visually Handicapped* (Association for Education of the Visually Handicapped, 919 Walnut Street, 4th Floor, Philadelphia, Pennsylvania 19107), Vol. 7, No. 1, March 1975, pp. 9–14. Report on a study using two physical science units of the Science Curriculum Improvement Study (SCIS) as adapted for visually impaired children.

Teaching Orientation to Blind Children, by Richard W. Larson. *Education of the Visually Handicapped* (see address above), Vol. 7, No. 1, March 1975, pp. 26–31. Mr. Larson, a mobility specialist at the Minneapolis Society for the Blind in Minnesota, describes a method of instruction which helps the congenitally blind child understand movement and the resultant changed position of stationary objects in relation to himself.

Visual Training (Low Vision Seminar), by Sherrill Adams et al. *Low Vision Abstracts* (Veterans Administration Hospital, 3801 Miranda Avenue, Palo Alto, California 94304), Vol. 2, No. 1, Spring-Fall 1974, pp. 1-8. In this feature article the authors outline the following eight visual training concepts: Open Cue Searching; Visual Motor Coordination; Visual Memory; Tracking and Fixation; Maximal Use of Peripheral Vision; Distinction of Foreground from Background; Discrimination of Shape and Position; and Perception of Distance and Depth.

A Kit for Making Raised Maps, by Grahame James. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London W1N 6AA, England), Vol. 59, No. 696, April 1975, pp. 85–90. The author is a member of the Blind Mobility Research Unit, Department of Psychology, at the University of Nottingham in England. His article describes a kit which can be used not only for single copy maps but also for map-masters from which plastic copies can be vacuum-formed in quantity.

Services for the Adult Deaf-Blind in the USSR, by A. I. Mescherjakov and A. V. Apraushev. *The New Beacon* (see address above), Vol. 59, No. 696, April 1975, pp. 90–93. Professor Mescherjakov is head of the Laboratory on Education of the Deaf-Blind, Institute of Defectology, USSR Academy of Pedagogical Sciences and Dr. Apraushev is principal of the Zagorsk School for the Deaf-Blind. Their paper was presented at the Fifth General Assembly of the World Council for the Welfare of the Blind, held August 7–16, 1974 in Sao Paulo, Brazil.

Service to the Blind . . . A Promise is Kept. *The Lion* (Lions International, York & Cermak Roads, Oak Brook, Illinois 60521), Helen Keller's inspirational speech to the International Convention of June 1925 marked the beginning of the International Association of Lions Clubs' devotion to work for the blind. Now in the 50th Anniversary year, new resolutions are presented vowing to continue the work.

Sightless Saviour of the World's Blind. *Imfama* (South African National Council for the Blind, 1st Floor, Nosa Buildings, 508 Proes Street, Pretoria, South Africa), Vol. 15, No. 1, February 1975, pp. 5–6. The story of John F. Wilson who founded the Royal Commonwealth Society for the Blind. In May 1974 his life work was honored by his election as the first non-medical president of the International Association for the Prevention of Blindness.

When Objects Are Enemies, by Warren Causey. *The Tennessee Public Welfare Record* (Tennessee Department of Public Welfare, 410 State Office Building, Nashville, Tennessee 37219), Vol. 38, No. 2, Spring 1975, pp. 38–40. The work of Don Kantack, a mobility specialist at Mason Brandon Industries for the Blind in Tennessee, is described. Mr. Kantack, who studied at Florida State University, is currently the only professionally trained mobility instructor employed by the Tennessee Department of Public Welfare Services for the Blind.

Fact Is Better Than Fiction, by Grover W. Westover. *The Tennessee Public Welfare*

Record (see address above), Vol. 38, No. 2, Spring 1975, pp. 57–59, 63. The story of Rebecca Walker, blinded as a teenager, and her successful struggle to achieve independence.

Von Senden, Mesmer, and the Recovery of Sight in the Blind, by D. W. Forrest. *The American Journal of Psychology* (University of Illinois Press, Urbana, Illinois 61801), Vol. 87, No. 4, December 1974, pp. 719–722. An examination of the case of Maria von Paradis, the blind Austrian concert pianist (1759-1824), and her temporary recovery of sight under treatment by Franz Anton Mesmer.

Light at the Tunnel End, by Leonard A. Robinson. Foundation for the Handicapped and Elderly, Inc. (1209 Burton Street, Silver Spring, Maryland 20910), 1975, 190p. $6.00. Mr. Robinson, a blind lawyer, offers a first-hand account of the legislative and administrative history of the Randolph-Sheppard Act, 1936, which established the blind vending stand program in Federal buildings.

The Sentinel, by Jeffrey Konvitz. Simon and Schuster (Rockefeller Center, 630 Fifth Avenue, New York, New York 10020), 1974, 315p. $7.95. This suspense novel, set in New York City, centers upon a young fashion model and her neighbors in a brownstone apartment building. The cast of characters includes several eccentric denizens and a blind priest.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Agency Administration

Standards of Accounting and Financial Reporting for Voluntary Health and Welfare Organizations. National Health Council, (1740 Broadway, New York, New York 10019), 1975. 135 p. $7.00; $5.00 to members of sponsoring agencies. Revised edition. Cosponsored by the National Health Council, the National Assembly of National Voluntary and Social Welfare Organizations, and the United Way of America.

Directories

Encyclopedia of U.S. Government Benefits. Government Data Publications, (Encyclopedia Division, 422 Washington Bldg., Washington, D.C. 20005), 1975. $17.95. Over 1000 pages, illustrated. Lists over 5000 services and resources available from the government, including the eligibility requirements for each listing. The range of resources and services includes grants, contracts, programs, financing, leases, royalties, research, loans, health care, and scholarships.

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Education

One Out of Ten: School Planning for the Handicapped. Educational Facilities Laboratories, (850 Third Avenue, New York, New York 10022), 1974. 24p. Single copy free. The old approach of teaching handicapped children in special schools is breaking down as the result of new laws, new philosophies, and court decisions. This pamphlet takes a look at the new requirements and alternatives available in education for this population.

Employment

One in Eleven: Handicapped Adults in America. President's Committee on Employment of the Handicapped. (Washington, D.C. 20210), 1975. 71p. Single copy free. Based on the 1970 census, this booklet compares the employment status and income level of handicapped and non-disabled citizens. The findings show that one out of 11 adult Americans is handicapped and that 52 percent of these disabled adults have incomes of less than $2,000 a year.

A Summary Report of the Seventeenth AFL-CIO National Conference on Community Services. American Federation of Labor and Congress of Industrial Organizations, (Department of Community Services, 815 Sixteenth Street, N.W., Washington, D.C. 20006), 53p. 50¢. This report of the May 1974 conference includes information on the worker in the market place, voluntarism, working women and child care, group legal services, aging, and meeting human needs.

Independent Living

What You Can Do for Yourself-Hints for the Handicapped, by Patricia Galbreaith. Drake Publishers, Inc., (381 Park Avenue South, New York, New York 10016), 1975. 272p. $12.00. An independent living handbook for handicapped persons, this manual contains such information as grooming, taking care of clothing, travel, cooking, childcare, exercises, tax deductions, and social security benefits.

Legislation

A Summary of Selected Legislation Relating to the Handicapped 1974. U.S. Department of Health, Education, and Welfare, (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402), 1975. 38p. 70¢. Brief synopses of the legislation effecting handicapped people enacted by the 93rd Congress.

Pamphlets

The Modern Treatment of Glaucoma ... Requires Your Help, Too. Lederle Laboratories, (Division of American Cyanamid Company, Pearl River, New York 10965), 1973. 9p. General information for the layman about glaucoma.

Preschool Education

Accountability: A Dilemma in Infant Intervention, by Rune J. Simeonsson and Ronald Wiegerink. *Exceptional Children* (The Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091), Vol. 41, No. 7, April 1975, pp. 474–481. Discusses the need for accountability in early intervention programs for handicapped children. The authors explore two parameters of accountability, effectiveness and efficiency, and propose methods to implement them into programs.

Professional Education

The Report of the Commission on Education for Health Administration. Health Administration Press, (University of Michigan, School of Public Health, Ann Arbor, Michigan 48104), 1975. 190p. $7.50. Contains the full report of the commission with its observations and recommendations on health education for the next decade.

Recreation

Swimming for the Handicapped, A Manual for the Aide. American National Red Cross (Washington, D.C. 20006), 1974. 36p. Outlines the role of the volunteer aide in a program to teach swimming to physically or mentally handicapped children.

Research

Visual Information Processing, edited by William G. Chase, Academic Press (111 Fifth Avenue, New York, New York 10003), 1973. 570p. $17.50. A revison of the papers presented at the Eighth Annual Carnegie Symposium on Cognition held in May 1972. The book analyzes the role of visual processes in cognition, including language comprehension.

Social Work

Counseling Strategies with Special Populations, by John G. Cull and Richard E. Hardy. Charles C Thomas, (301–327 East Lawrence Avenue, Springfield, Illinois), 1975. 341p. $16.95. This book deals with a variety of special populations, including the physically and mentally handicapped, and the particular counseling problems of each. There is a chapter titled, "Special Considerations in Counseling Blind and Severely Visually Impaired Persons," that deals with the problems of that population.

Trends: In Homemaker-Home Health Aide Services, by Eugene B. Shinn and Nancy Day Robinson. *Abstracts for Social Workers* (National Association of Social Workers, 49 Sheridan Avenue, Albany, New York 12210), Vol. 10, No. 3, Fall 1974, pp. 3–8. A rapid growth of homemaker-home health aide services has occurred in the last decade. This article explores the current trends in the services provided, situations where home aide services are needed, and funding. The historical development of homemaker services is also discussed.

Statistical Surveys

Refraction Status of Youths 12-17 Years, by Jean Roberts. National Center for Health Statistics, Health Resources Administration, U.S. Public Health Service. *Vital and Health Statistics* (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402), Series 11, No. 148, DHEW Publication No. (HRA) 75-1630, December 1974, 55p. $1.15. This report presents information on the degree of eye muscle imbalance, the strength and type of present glasses or contact lenses, and estimates of the best corrected acuity for youths 12 to 17 years old by age, sex, race, region, and family income.

News in Brief

■ John F. Wilson, C.B.E., M.A., director of the Commonwealth Society for the Blind and president of the International Agency for the Prevention of Blindness was knighted by Queen Elizabeth II in ceremonies on January 1, 1975.

■ Elevator control panels equipped with braille guides are increasingly being used in public buildings throughout the United States to give blind persons ready access to operational and emergency buttons.

Presently there are over 100 such elevators in the country. Some state office buildings are now requiring their installation. In addition to braille guides, some elevators have raised Arabic numerals to aid non-braille readers and partially sighted people.

■ The National Institute for Rehabilitation Engineering (NIRE) now has a free consumer advisory service to provide handicapped persons with information regarding rehabilitation services, facilities, advertised products, and special aids.

The service was designed to inform handicapped individuals of the resources available and to protect them from fraud. Persons desiring information should call (201) 838-2500 on any Monday or Friday between 2 p.m. and 5 p.m.

■ The U.S.S.R. has a novel way of dealing with the daily living and employment problems of its blind citizens. They have organized a National Society of Inventors and Rationalizers to sort out mechanical and sensory problems as they occur. This organization receives no financial reward for its endeavors, but a national award for "socialist emulation."

■ Two correspondence learning programs are available for parents of deaf and deaf-blind preschool children. Both programs are available free of charge in English and Spanish from John Tracy Clinic, Corresspondence Education, 806 West Adams Boulevard, Los Angeles, California 90007.

■ The National Instructional Materials Information System (NIMIS) became operational in July 1975. This system will provide extensive child-use materials to students, teachers, and professionals. The goal is to have 10,000 items in the data base this year, with that number doubling next year.

For information on the search system, contact Margaret Booker, Texas Area Learning Resource Center, 2613 Wichita Street, Austin, Texas 78712.

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- The Cleveland Society for the Blind has received a $16,400 grant from the George Gund Foundation. The grant will be used to provide mobility training to older visually handicapped persons in the Greater Cleveland area, who, because of advanced age or other complications, are unable to go to the center for services. The mobility training will enable these individuals to travel more independently within their community.

- The National Accreditation Council (NAC) has announced that eight agencies have been qualified for reaccreditation. The agencies are: Arkansas Enterprises for the Blind, Little Rock; Hadley School for the Blind, Winnetka, Illinois; Maryland School for the Blind, Baltimore; Massachusetts Association for the Blind, Boston; Cincinnati Association for the Blind; Cleveland Society for the Blind; Rhode Island Association for the Blind, Providence; and Virginia Commission for the Visually Handicapped.

- The American Coalition of Citizens with Disabilities, the national activist organization dedicated to amending the Federal Civil Rights Act of 1964 to bar discrimination against handicapped persons, has elected new executive officers.

  The new officers are: president, Eunice Fiorito, New York City; first vice president, Frederick Schreiber, Silver Spring, Md.; second vice president, Diane Lattin, Washington, D.C.; secretary, Lex Frieden, Houston, Tex.; and treasurer, Louis T. Rigdon II, Washington, D.C.

- A bicycle hook-up, called a buddy bar, has been developed by Funway Company that enables a blind person to ride a bicycle side-by-side with a sighted companion. The buddy bar is priced at $29.95 and may be ordered from Funway Company, 15940 Warwick Road, Detroit, Michigan 48223.

- The New York City Office of the Aging has begun an experimental project in the Bronx called, "Early Alert Security," to aid aging shut-ins. Under the program Bronx citizens over 65 years of age are being asked to register their names so mail carriers can keep a special watch over their mailboxes for any unusual accumulation of mail. The couriers can then contact the local Office of the Aging so that whatever help is needed (medical aid, a social worker, transportation, a meal, etc.) can be provided.

- Harold G. Roberts, executive director of the American Foundation for Overseas Blind, Inc. (AFOB), has announced that the structure of AFOB is being reorganized in order to achieve greater operational efficiency and to increase the agency's capacity to respond to present-day needs.

  The New York headquarters has been divided into three major program departments—Education, under the direction of Dr. Jeanne R. Kenmore; Rehabilitation, under Mr. R. Roy Rusk; and Prevention, headed by Dr. Susan T. Pettiss. Under this new operational plan, AFOB is closing its regional offices in Paris, France, and Kuala Lumpur, Malaysia.

- Dr. Louis Z. Cooper, professor of pediatrics at Columbia University and a leader in the treatment and prevention of congenital rubella infections, has said that a rubella epidemic that should have hit in the mid-1970's "appears to have been thwarted." He warned, however, that the rate of rubella immunization has leveled off since 1972.

  Currently, 60 percent of children in the one- to four-year-old age bracket are being immunized and 80 percent of the five- to nine-year-olds. Dr. Cooper added, "Everyone must be immunized to totally prevent this disease from striking unborn children."

- The Catholic University of America is offering a post-master's program in library science to train librarians in the specialized field of providing library and media services to handicapped people. For further information contact the Graduate Department of Library Science, the Catholic University of America, Washington, D.C. 20064.

- Vice-President Nelson Rockefeller honored three of the nation's top-ranking blind college students on May 21 "in recognition of extraordinary scholarship, determination and intellectual vigor." The three students, Caryn Navy, Brooklyn, Michael Levy, Bradley Beach, New Jersey, and Linda Schneider, Arlington, Virginia, were each presented with a $500 Scholastic Achievement Award from Recording for the Blind, Inc., New York City.

- Northeastern Colorado will be the site of a $125,000 project funded by the Administration on Aging to help elderly visually handicapped persons to develop a more independent life. A five-member team will travel throughout the area in a 27-foot, fully equipped modern mobile home, teaching visually disabled individuals such independent living skills as sewing, cooking, how to dress and care for clothing, and the use of new low vision devices.

  Interested individuals or community groups in Colorado can contact Ron Landwehr, 2662-C 11th Avenue, Greeley, Colorado.

- A special flat, wide-angle rear view mirror for visually impaired persons who use telescopic lenses for driving has been devised by the National Institute for Rehabilitation Engineering (NIRE). Unlike the regular curved rear view mirror it does not distort or narrow the visual field. Ordering information is available from NIRE (Pompton Lakes, New Jersey 07442).

- The Catholic Guild for the Blind is offering to braille or put into large print any small item that is of value to visually handicapped persons. Material must be submitted to determine whether transcription is possible. Send to: Catholic Guild for the Blind, 191 Joralemon Street, Brooklyn, New York 11201.

- Blind Outdoor Leisure Development (BOLD) is an organization that teaches blind children and adults how to ski. The program which began in Aspen, Colorado, has expanded throughout the United States. For information write, BOLD, Inc., Box 3204, Aspen, Colorado 81611.

- Braille menus have been introduced into several midwestern restaurants for the convenience of their visually handicapped diners. One of the restaurants, the Michigan Inn, managed by Western International Hotels, is in Detroit.

  Holiday Inn provides the service in eight of its Chicago and Minnesota hotels. The Holiday Inn menus are also available in large type for partially sighted patrons.

- To meet the increasing emphasis on placement activities and the need for job-seeking skills in adjustment programs, the Materials Development Center (Department of Rehabilitation and Manpower Services, School of Education, University of Wisconsin—Stout, Menomonie, Wisconsin 54751) is distributing an audiovisual program, the *MDC Job Quest Series*. It includes such information as job sources, how to write a resume, and interviewing for a job. The slide series is available on a loan, rental or sale basis.

- The World Health Organization (WHO) has chosen the prevention of blindness as the theme for its World Health Day 1976. It is hoped that through an international effort the four major causes of preventable blindness (river blindness, trachoma, xerophthalmia, and cataracts) will be eradicated.

APPOINTMENTS

- Overbrook School for the Blind: **Arthur Segal,** board of trustees.

- Vermont Association for the Blind: **Charles D. Vitagliano, Jr.,** director of rehabilitation services.

- National Health Council: **Earl Cunerd,** president.

- Recording for the Blind: **Stuart Carothers,** executive director; **Donald Staley,** director of special projects.

- President's Committee on Employment of the Handicapped: **Dennis R. Wyant.**

- National Eye Institute: **William F. Raub**, associate director, Extramural and Collaborative Programs.

- Jewish Guild for the Blind: **William Bowen**, assistant director, Home for the Aged, Yonkers, New York.

- National Conference on Social Welfare: **Norman V. Lourie**, president.

- Carroll Center for the Blind: **John A. Reardon**, executive director.

- Idaho Commission for the Blind: **Howard Barton**, executive director.

- Jewish Guild for the Blind: **Irving G. Kaufman**, president and **Alvin J. Glick**, director of psychiatry.

- Veterans Administration, Western Blind Rehabilitation Center: **J. Kenneth Wiley**, chief.

AWARDS

- Outstanding Special Educator of the Year: **Ina W. Kurzhals**, curriculum director, Utah School for the Blind.

- Outstanding Federal Employee of the Year: **Billy R. West**, training specialist in tape recording, Library of Congress, Division for the Blind and Physically Handicapped, Volunteer Utilization Section.

- Frances Campbell Citation of the Round Table on Library Service to the Blind, American Library Association: **Arthur Helms**, retired talking book production manager, American Foundation for the Blind.

- Handicapped State Employee of the Year 1974: **William T. Powell**, Erie district manager, Pennsylvania Bureau of the Visually Handicapped.

- Handicapped American of the Year, President's Committee on Employment of the Handicapped: **Senator Elton W. Ringsak**, state senator, Grafton, North Dakota.

- Anne Sullivan Award: **John J. Murphey**, deaf-blind volunteer worker, Missouri Federation for the Blind.

- Pittsburgh Blind Worker of the Year: **Marie Cain**, power sewing machine operator, Pittsburgh Blind Association.

- Founder's Award, Dialogue Magazine: **Charles L. Schepens, M.D.**, assistant professor of ophthalmology, Harvard Medical School and founder of Eye Research Institute of the Retina Foundation.

- Ohio Optometric Association Distinguished Service Award: **Cleveland Society for the Blind.**

- Disabled American Veteran of the Year: **Buddy B. Spivey**, field representative, Blinded Veterans Association.

RETIREMENTS

- The Industrial Home for the Blind, Brooklyn, New York: **John F. Brady**, executive director.

COMING EVENTS

September 21 National Society for the Prevention of Blindness, Glaucoma Symposium, Dallas.

September 21-25 American Academy of Ophthalmology and Otolaryngology, Dallas.

September 24-28 American Academy for Cerebral Palsy, New Orleans.

September 26-27 Association for Education of the Visually Handicapped, Middle Atlantic Region, Wilmington, Del.

September 28-October 4 The National Council on the Aging, 25th Annual Meeting, Washington, D.C.

September 29-October 1 World Council for the Welfare of the Blind European Committee, International Congress on Cultural Activity, Pastimes, and Sports for the Blind, Warsaw, Poland.

October 5-11 World Medical Association, Annual Meeting, Tokyo, Japan.

October 11-15 National Rehabilitation Association, Annual Conference, Cincinnati.

October 14-18 American Occupational Therapy Association, Annual Conference, Milwaukee.

October 15 White Cane Safety Day.

October 16-19 American Board of Ophthamology, Philadelphia.

October 16-23 National Conference of Catholic Charities, Annual Meeting, Cincinnati.

October 19-23 National Recreation and Park Association, Dallas.

October 22-25 National Association of Social Workers, Professional Symposium, Hollwood-by-the-Sea, Fla.

October 26-30 Gerontological Society, 28th Annual Scientific Meeting, with American Geriatrics Society, Louisville.

October 29-31 American Association of Workers for the Blind, Pennsylvania-Delaware Chapter, Annual Meeting, Wilkes-Barre, Pa.

November 2-7 Fifth Pan-Pacific Conference on Rehabilitation of the Disabled, Singapore.

November 6-7 National Easter Seal Society for Crippled Children and Adults, 56th National Convention, Louisville.

November 7-8 Association for the Education of the Visually Handicapped, Mid-Atlantic Region, First Biennial Conference, Wilmington, Del.

November 11-15 National Association for Education of Young Children, Dallas.

November 12-13 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Little Rock.

November 13-15 International Symposium on Cataracts, Iowa City.

November 16-19 American Association of Homes for the Aging, 14th Annual Conference and Meeting, San Diego, Cal.

November 16-20 American Public Health Association, Annual Meeting, Chicago.

November 18-20 International Conference on the Situation of Blind Women, Belgrade, Yugoslavia.

November 29-December 4 Association of University Professors in Ophthalmology, Washington, D.C.

December 3-5 National Council on Philanthropy, 18th National Conference, Washington, D.C.

December 17-20 American Public Health Association, National Round Table Conference, New Orleans.

Intensive Behavior Modification Workshops
September 24-27 San Francisco

October 5-8 Toronto

October 12-15 Chicago

October 23-25 Los Angeles

November 5-8 Houston

November 19-22 Denver
For information, contact Behavioral Modification Technology, P.O. Box 597, Libertyville, Ill. 60048; (312) 367-0606.

1976

February 8-11 Council for Exceptional Children, Conference on Right to Education/Placement of Exceptional Children, New Orleans.

February 29-March 3 Council on Social Work Education, Annual Program Meeting, Philadelphia.

March 3-7 American Orthopsychiatric Association, Annual Meeting, Atlanta.

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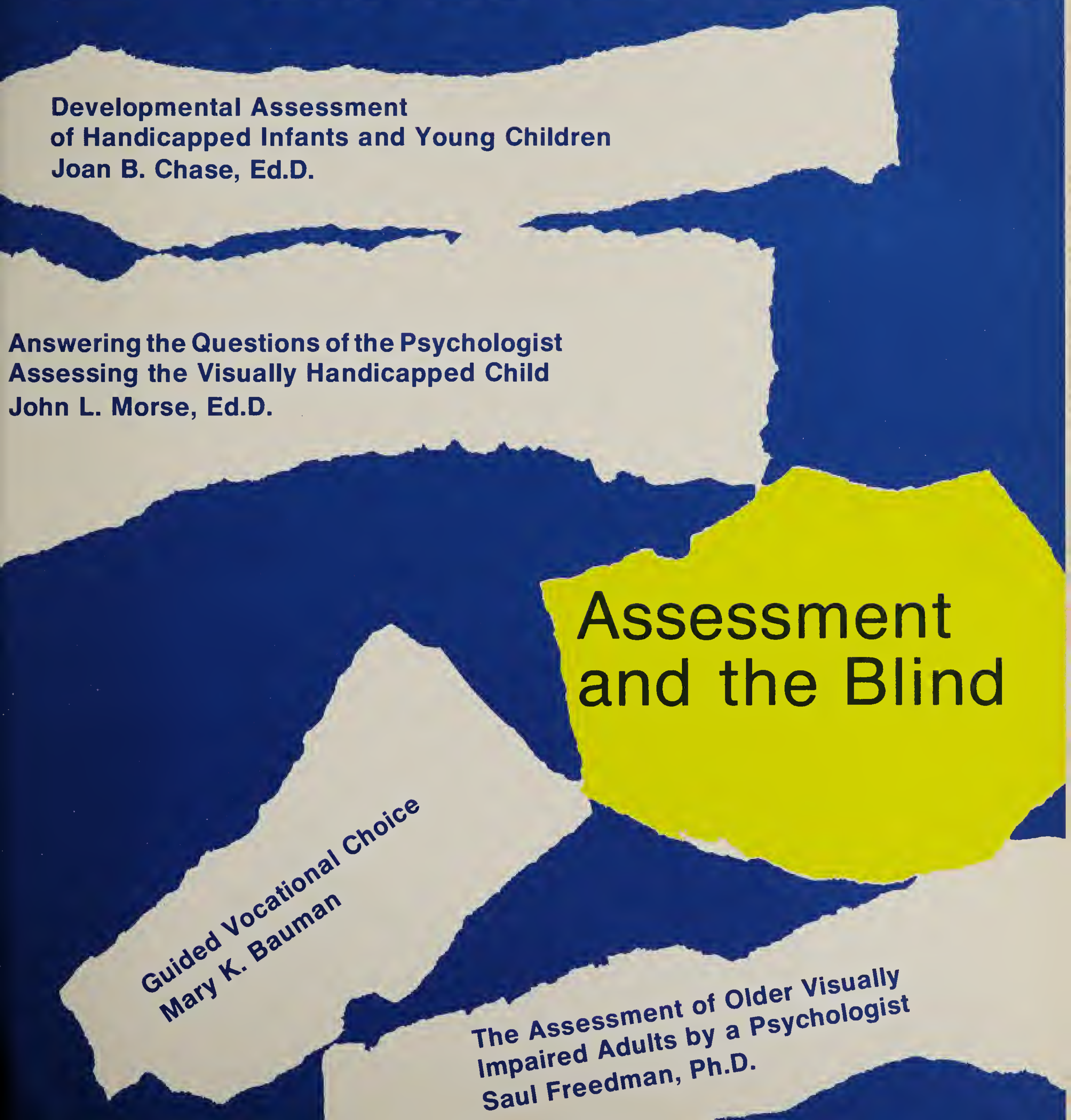

Developmental Assessment
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Assessment and the Blind

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Introduction to Assessment and the Blind

MICHAEL E. MONBECK
MARY ELLEN MULHOLLAND
The authors are, respectively, associate editor and managing editor of this journal.

Abstract: *The paper describes the history of the development of the special issue of the* New Outlook for the Blind *on assessment and the blind; how and why the subjects included were chosen; the general aspects of assessment that must be considered regardless of the specific aspect involved; questions about assessment that need to be resolved.*

■ Regular readers of the *New Outlook for the Blind* may be surprised to find assessment the subject of a special issue. Haven't special issues of the journal traditionally dealt with "new" subjects? Either specific groups within the blind population—such as the aging or the mentally retarded—who had not been receiving their fair share of attention or services. Or areas of learning—such as sex education or low vision training—that had been somewhat ignored or slighted.

Certainly assessment does not fit into either of these categories? Assessment plays a *very* large role in the lives of most visually handicapped persons, affecting the education and services they receive, their choice of occupation, how they become socialized. Which is just the point. When a process, any process, assumes so much importance and potentially can exercise such control over people's lives, there is always the danger that it will be misused or abused and the real needs of the individual subverted.

The seeds for this special issue of the *New Outlook* were planted more than two years ago during a meeting between the journal staff and the editorial board. The staff was concerned that a subject that played so crucial a role in the lives of many visually handicapped persons seemed to be written about so little. This seemed odd, since both colleagues at the American Foundation for the Blind (AFB) and in other organizations reported that they consistently received a large volume of mail on the subject, almost all of it asking for help and guidance. Many members of the editorial board also reported receiving mail on the subject.

INFORMATION NOT AVAILABLE

Further, there seemed to be a strong common thread in the bulk of the requests for information received, wherever they were directed, to a national organization such as the AFB, to a local agency for the blind, to a residential school or a university vision program. "I have never tested a blind person before, please tell me how to do it." "What tests should I use to test a blind child." "I have been assigned to test a blind person in two weeks and I know nothing about blindness. How can I do it?"

The questions were disturbing for a number of reasons. Invariably, they were about formal tests and how to administer them only. There was the assumption that only very special tests specifically developed for the blind would do. The view that testing is only a small part of the assessment process was missing. As was the feeling that there is such a thing as over-assessment. Finally, reading between the lines, one could often detect the feeling on the part of the writer that testing or evaluating a blind person was so very different, so odd, that the tester's presumed ability to use his or her professional skills with a broad range of very diverse individuals did not extend to using them with blind persons.

Before the *New Outlook* editorial board meeting was over, there was general agreement that the editorial staff should attempt to develop a special issue of the journal on the subject of assessment. Feeling the need of some expert guidance on the subject, the editors invited Zofja S. Jastrzembska, a psychologist herself, and then assistant director of the International Research Information Service of the American Foundation for the Blind, to serve as guest editor.

Numerous conversations between the guest and the staff editors occurred before a focus and structure for the issue emerged. There was, on the one hand, the need to publish articles that would be of immediate and practical use to all of those who were faced with testing blind persons, but who had little or no experience and knowledge. On the other

"There is always the danger that a process such as assessment will be misused and the true needs of the individual not met. It is even possible for assessment to be abused, leaving the individual open to manipulation."

hand, there was also a very real need to re-examine the whole assessment process as it affects the blind person and ask some very hard questions about it. What *is* the proper role of the assessment process in the life of the visually impaired individual?

For a while, the problem of how to answer such seemingly opposite needs in a very limited amount of space was overwhelming. To help them find an answer, the editors invited a very small group of people to meet and give them expert advice. The group* met twice, in November 1974 and April 1975. From the opening minutes of the first meeting, there was incredible enthusiasm for the project. Once the topics for the issue were set, several of those present volunteered to contribute articles.

JOINT PUBLICATION And when it became obvious that the subject was so large and so complex that it could not possibly receive fair and complete treatment in a single issue of one journal, one of those present, Mary K. Bauman, in her role as executive secretary of the Association for Education of the Visually Handicapped, agreed to ask Don L. Walker, editor of the Association's journal, *Education of the Visually Handicapped*, to devote the Fall 1975 issue of that publication to assessment (for contents and abstracts, see page 340). The result is a landmark in publishing in this field—joint publication by the two leading professional journals of a comprehensive series of articles on a subject of importance to the whole field.

The articles from both journals will be combined into a single publication sometime during the winter of 1976. In addition, several other publications and projects underway as a result of planning for this issue are described in the article, "Further Sources of Information About Assessment," beginning on page 364.

In making decisions about the specific areas of assessment of the visually impaired that would be treated in this issue, the editors and the committee looked for a way to answer the need of many for specific information about assessing fairly well defined groups within the visually impaired population and at the same time raise all the questions about assessment in general that are of concern to blind persons themselves and their families and to all professionals in the field. Thus, it was agreed that individual papers would, in general, deal with assessment more or less by age—assessment of the infant and pre-school child, the school-age child, the vocationally bound young adult, and the non-vocationally bound blind person who is often but not always 55 or older.

It was also agreed that since all of the issues involved in assessment of the blind in general applied to all age groups and settings it would be most appropriate to treat them as part of an introduction to the individual articles. One that all committee members had input to and raised all of the questions that needed serious consideration from the field. Following is that statement. We hope that those who feel they have something to contribute to it, will send comments and letters to the *New Outlook* about it for publication. And that some will give serious consideration to preparing articles about specific aspects of it. A special issue of a journal cannot and should not be the final answer.

The Danger of Misuse and Abuse

There is always the danger that a process such as assessment will be misused and the true needs of the individual not met. It is even possible for assessment to be abused, leaving the individual open to manipulation. Many blind persons perceive these dangers when they are being assessed—either as students who wish some guidance in planning the course of their further education or training, or as clients who are seeking the services of an agency to help them achieve some goal—and they are demanding a voice in how the assessment process is conducted and a role in how the results of that process are used. For this reason, and because there are so many questions about how the assessment process is best carried out by agency and school staff, what assessment instruments and techniques produce the most useful results, and the uses to which those results should be put, that we are devoting such a large amount of space to this subject.

HUMAN COMPLEXITY The complexity of assessment stems directly from the complexity of its object—which is not an object at all, but an individual human being, that unique combination of genetic endowment, environmental conditioning, hopes, dreams, feelings, attitudes, "hang-ups," problems, and so on. In assessment, a trained professional aims at gaining some understanding of the individual's complexity and determining, on the basis of that understanding, the nature of the individual's problems or life-situation and/or the individual's potential for changing his situation or achieving his goals in life. To do this, a number of techniques are used, including the case history, interviews, tests, questionnaires, inventories, etc. No single technique or assessment instrument provides a complete picture. In fact, often the assessments of a number of professionals are pooled in order to reach the best possible picture of the individual. Ideally, the individual being assessed is a partner in the process, participating fully in the formulation of the goals of the assessment and the means used to pursue them in the drawing up and interpretation of the conclusions reached.

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* J. Albert Asenjo, specialist in independent living, American Foundation for the Blind; Mary K. Bauman, executive secretary, Association for Education of the Visually Handicapped, and director, Nevil Interagency Referral Service, Philadelphia; Robert Bowers, Ed.D., coordinator, Program for the Visually Impaired, Teachers College, Columbia University; Joan B. Chase, Ed.D., associate professor, Department of Psychiatry, College of Medicine and Dentistry of New Jersey, Rutgers Medical School; Saul Freedman, Ph.D., psychologist, Center for Independent Living-New York Infirmary; Zofja, S. Jastrzembska, assistant director, International Research Information Service, American Foundation for the Blind; John L. Morse, Ed.D., psychologist, Concord, New Hampshire; Professor Ferne K. Roberts, Special Education Program, Hunter College, New York City, and president, Association for Education of the Visually Handicapped; Robert L. Robinson, research associate, American Foundation for the Blind; Susan J. Spungin, Ed.D., specialist in education, American Foundation for the Blind; and Don L. Walker, Ed.D., editor, *Education of the Visually Handicapped*, and professor of special education, University of Virginia, Charlottesville.

But why is all this probing necessary? Why do counselors and other workers need to understand an individual in such depth? In order for him to help an individual to move from an unsatisfactory situation (the one which led him to seek help) to a more satisfactory one, the professional worker must know as much as possible about the starting situation and about the characteristics of the particular person who is in that situation. This does not, however, mean that by seeking help the individual can be subjected to indiscriminate probing. There must be a clear rationale for the areas about which more information is needed. A most important concern here is the question of how the many different kinds of formal assessment instruments, i.e., tests, are used. A very inaccurate picture of the individual will emerge if tests are used to answer questions that were better pursued through other means. Testing is an important component in the assessment process, but in many instances there are better and more useful techniques available—even though they might be more time-consuming and require a very high level of skill on the part of the professional. In many cases, questions that need to be answered just simply cannot be answered through testing and other means must be used.

TESTS AND THE SCHOOLS A difficult problem that is faced by nearly every school and agency providing services to blind and visually handicapped persons is meeting the needs of the researcher when these needs require the testing of students or clients. Research is an important activity, but so are the rights of individuals to not be subjected to an endless number of tests that are often of little benefit to them or to those directly involved in helping them. Great care must be taken so that an appropriate balance between the legitimate needs of researchers and the rights of students and clients is maintained.

Another difficult situation confronting school administrators is the giving of certain standard tests to students as required under state education laws. Unless these tests are a part of the school's process of educational assessment, they can impose an additional burden on both the professionals who must administer the tests and on the students who must take them. An awareness on the part of the school staff of the dangers of too many tests can prevent any negative effects on the students.

Questions About the Value of Assessment

The value of assessment is sometimes called into question and the doubts expressed about it fall into two categories. First, there are those who say that assessment is misused and that, therefore, it is potentially harmful to those it is intended to help. When the assessment process is misused, the dangers to the individual are indeed real. For example, tests can be used as a way of avoiding reasoned and responsible judgments—judgments that it is the responsibility of the professional to make—and using the test results instead. Similarly, test results can be used as the sole basis for making decisions concerning a student or client, rather than as meaningful pieces of information that need to be considered in the making of decisions. Finally, the assessment of an individual can be used to pigeon-hole him, to place him in some category, rather than using it to find his unique combination of strengths and weaknesses, resulting in a highly individualized set of recommendations. Insofar as such misuse of assessment, and particularly testing, does occur, it is contrary to the ethical use of those procedures.

The second category of criticism leveled at assessment involves the question of its limitations, limitations that are recognized by all who are knowledgeable about it. The controversy arises when the critics conclude that these limitations invalidate the use of testing in assessment, while the defenders say that these limitations are so well understood that their influence on the results can be taken into account. The limitations involve such questions as determining the validity of any particular test (do the results accurately reflect those factors being tested for?), the effects on the test results of the cultural bias that can creep into the design of a test, and so on.

Since the reason that the assessment process is carried out is to help bring about some change in the life of the individual, the critical point must be the uses to which the results of that process are put. In some cases, assessment is used to determine the course of action and the kind and level of services that will be offered to the client in order for him to reach some desired outcome or change in his life. Because there is a danger of the results being used merely to put a label on the person (and then provide those services deemed most suitable for such a person), it is important that the individual be able to hold the agency accountable for its implementation of a strategy of services. In other words, as a partner and active participant in the assessment process, the individual has the right to question both the results of that process and the proposed implementation that follows from those results. In addition, because of the sensitive nature of the records associated with an individual's assessment, the client should expect that those results will be kept in strictest confidence. There is, on the other hand, the difficult situation of it being highly desirable that a client's family or a child's parents be involved in the interpretation of test results and in the formulation of a plan of implementation. The cooperation of the subject in involving others in this process is obviously most desirable.

Additional Issues

In the assessment of blind and visually handicapped individuals, there are a number of additional issues that should be mentioned. For example, who is qualified to assess blind persons? Are any special qualifications really necessary? Who should administer tests? Does the interpretation of test results require any special skills or training? If in most cases a qualified professional is able to do these things, are there nevertheless some special cases (certain tests or the presence of certain combinations of additional handicaps, for example) in which he would not be competent? Who should carry out the adaptation of tests and other assessment instruments so that visually handicapped individuals can take them without penalty? How can it be determined what norms should be applied in interpreting the test results? Indeed, what is the correlation (if any) between the norms for sighted subjects and blind subjects?

Finally, we would like to repeat the earlier request that readers respond to the issues raised in this paper and also to thank three people in particular whose participation was crucial to the development of this issue, Zofja S. Jastrzembska, without whom we could not have put it together, and Geraldine Scholl and Joan B. Chase, whose early interest in the idea got us started and whose steady encouragement along the way kept us going.

The Special Issue of Education of the Visually Handicapped

▪ *Education of the Visually Handicapped*, the quarterly journal of the Association for the Education of the Visually Handicapped, has devoted its entire Fall 1975 number to the subject of assessment and the blind. (Two additional articles will appear in the Winter number.) So that readers of this special issue of the *New Outlook for the Blind* would be aware of the contents of the companion issue of *Education of the Visually Handicapped*, its editor, Don L. Walker, Ed.D., has supplied us with the following abstracts of the articles comprising that issue.

"President's Page," by Ferne R. Roberts

The importance of assessment as the basis for all programming for visually handicapped children, youth, and adults is emphasized and the developing role of special educators as diagnosticians is described. The essential components of educational assessment—etiological diagnosis; comparison of achievement; and developmental assessment and their function in the development of a systematic, comprehensive, and continuous assessment program—are outlined.

An Educator's Approach to Assessing Preschool Visually Handicapped Children, by Victoria H. Bell

Written primarily for the teacher of preschool visually handicapped children, this article provides a model for a continuous and comprehensive assessment of educational potential. Educational potential assessment is described as being based upon the teacher continuously 1) assessing the child's present level of functioning, 2) developing individually oriented program structures, and 3) monitoring progress. Outlined are directions for teachers implementation and utilization of formal assessment instruments, parental interview techniques, observation scales, direct testing and diagnostic teaching procedures, and services of other professionals. Listed among the beneficial results derived from this approach are: 1) indications of the child's present level of development, 2) recommendations for present services based upon the child's strengths and weaknesses, 3) referral for possible additional handicaps, 4) recommendations for placements (home and/or nursery school, special nurseries) in which services should be received, 5) indications for possible future placement (local, residential, special classes), and 6) continuous monitoring of the child's development and rate of maturation.

Hidden Abilities Discovered Among Multiply Handicapped Blind Children, by Janet Klineman

Case study evaluations of multiply handicapped visually impaired children with complex learning and behavioral problems at the Western Pennsylvania School for Blind Children are discussed as examples of children for whom new channels of learning were discovered and developed through an objective, systematic assessment and individualized programming approach. The importance of assessing preschool blind children as soon as they are diagnosed and developing early education programs to increase their chances of attaining normal development is emphasized. A list of assessment instruments which may be utilized or adapted to each child's unique characteristics to provide pre- and post-program data for evaluative purposes and to determine behaviorally oriented tasks for the development of individualized instructional strategies is included.

Achievement Assessment of the Visually Handicapped, by Douglas K. Ozias

The procedural, conceptual, and methodologieal limitations of achievement assessment of the visually handicapped are discussed in this presentation of the "state of the art." Concern centers upon the historical issue of whether or not the approaches utilized in testing visually handicapped students (using adapted and modified instruments designed for a normally sighted population) have provided sufficiently valid and reliable predictive information, and the current trend of accepting local normative data and using "the criterion reference" approach for the purposes of accountability and prediction in evaluating achievement. Ten achievement tests used with the visually handicapped are reviewed.

Role of Psychologist to Teacher of the Visually Handicapped, by Susan J. Spungin and Rose-Marie Swallow

Cooperative assessment and diagnosis of the psychoeducational needs of visually handicapped learners by both qualified school psychologists and competent teachers is viewed as being pivotal to successfully implementing educational innovations, and to translating learning theory and diagnostic implications into appropriate teaching procedures. The relevance or significance of a psycho-educational evaluation is seen as dependent upon the ability of the psychologist to adapt his recommendations to the learning situation, and the teacher to accommodate to the educational, behavioral, or environmental changes recommended. Techniques for assessing visually handicapped students using the Wechsler Intelligence Scale for Children, the Bender Visual-Motor Gestalt Test, and the Wide Range Achievement Test are briefly outlined and evaluated.

Single copies of this issue of *Education of the Visually Handicapped* are available from the Association for the Education of the Visually Handicapped, 919 Walnut Street, Philadelphia, Pennsylvania 19107, for $3.00 each.

Developmental Assessment of Handicapped Infants and Young Children: With Special Attention to the Visually Impaired

JOAN B. CHASE, Ed.D.
Dr. Chase is associate professor, department of psychiatry, College of Medicine and Dentistry of New Jersey, Rutgers Medical School, Piscataway, New Jersey.

Abstract: *To effectively plan for services for young handicapped children, early objective developmental assessments are necessary. Although caution must be exercised in their use, assessment measures for infants can help to prevent, ameliorate, or uncover the difficulties that the handicapped child might face. By using a battery of assessments, a profile of the child's abilities, strengths, weaknesses, and disabilities is yielded.*

■ Few occurrences in life are as universally celebrated as the birth of a new baby. The procreative process is viewed with joy and some wonder in all cultures. Consciousness of risks involved in the gestation and birth process accompanies, however, the joy and celebration, so that the anticipation of delivery is rarely without apprehension. The appearance of a disorder either at birth or soon after evokes tremendous feeling, both on a cultural and personal level.

Observing infants grow and interacting with them is also a source of pleasure in all cultures. In instances where this developmental process is impeded by a handicap, the social and individual reactions are usually acute.

It is understandable, then, that attention to such painful issues as the initial diagnosis of problems and the assessment of infant development has not received the scope of attention it merits. Resistance to early detection is probably a cultural phenomenon. Until quite recently, few resources were available for evaluation early in life. Most determinations were only medical in nature, and developmental issues were rarely addressed. Parents were often advised to wait until school age to seek help with development or training.

In recent years, more widespread study of infant growth and development has appeared. Research has explored issues of cognitive development (e.g., Wachs, Uzgiris & Hunt, 1971; Eliot, 1971; Church, 1970), of early individual differences (e.g., Bayley, 1956; Escalona, 1968; Korner, 1972) of social/emotional development (e.g., Rimland, 1964; Decarie, 1965; Fish, 1971) and of diagnosis of early disorders (e.g., Heider, 1971; Knoblach & Pasamanick, 1974). Studies have revealed several basic trends:

BASIC TRENDS

1. Individual variations in neonatal and earlier development are greater than previously believed;
2. The more specific the measure (for example, fine motor, visual or auditory screening tests have been devised), the more such variability becomes apparent;
3. Very early signs, such as those on the Apgar Scale, have predictive value. In other words, we can now identify a proportion of the "high risk" infants very early in life. (The Apgar Scale, Figure 1, next page, developed by the late Dr. Virginia Apgar, is administered immediately after birth. Application of the scale yields a score of from zero to ten. Owing to the intimate connection between respiration/circulation and neurological functioning, the scale identifies those children with potential for neurological damage. Figures 2 and 3 demonstrate frequency and birth-weight differences (Drage & Berendes, 1966).)
4. Development follows a sequence which appears to occur in building block fashion. Delays might occur in major areas, such as movement or language, but the sequence within areas may be delineated. Such research findings aid in our understanding of the nature of all human growth.

From a practical vantage point, psychologists are interested in this research because it provides the basis for assessing the development of individual infants. As with any appraisal of an individual's functioning, the most important first consideration is the purpose. If early assessment leads to early intervention, so that those closely involved in the care and training of the child glean directions for fostering development, the appraisal is worthwhile. Unless the findings are translated into action, particularly in the early stages of life, assessment becomes merely an exercise.

But if findings (either research or individual) are employed to prevent, ameliorate, or uncover the difficulties encountered by handicapped children, and to plan for opti-

Sign	*0*	*1*	*2*
Heart Rate	Absent	Slow (below 100)	Over 100
Respirator Rate	Absent	Hypoventilation weak cry	Strong cry
Muscle Tone	Limp	Some Flexion	Well flexed
Reflex Response	No Response	Some Motion	Cry and foot withdrawal
Color	Blue, Pale	Body pink extremities blue	Completely pink

Figure 1. The Apgar Scale.

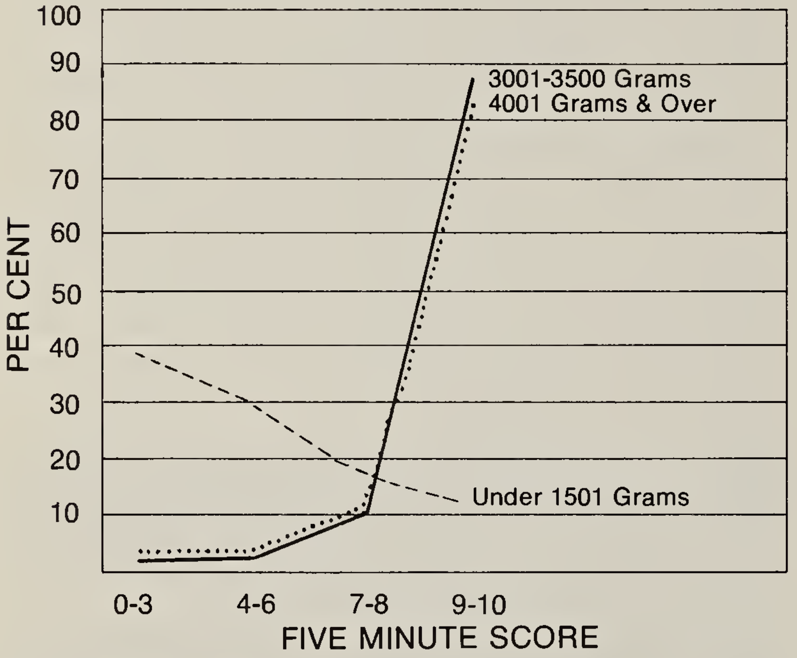

Figure 2. Percentage Distribution of Five Minute Scores for Selected Birth Weights.

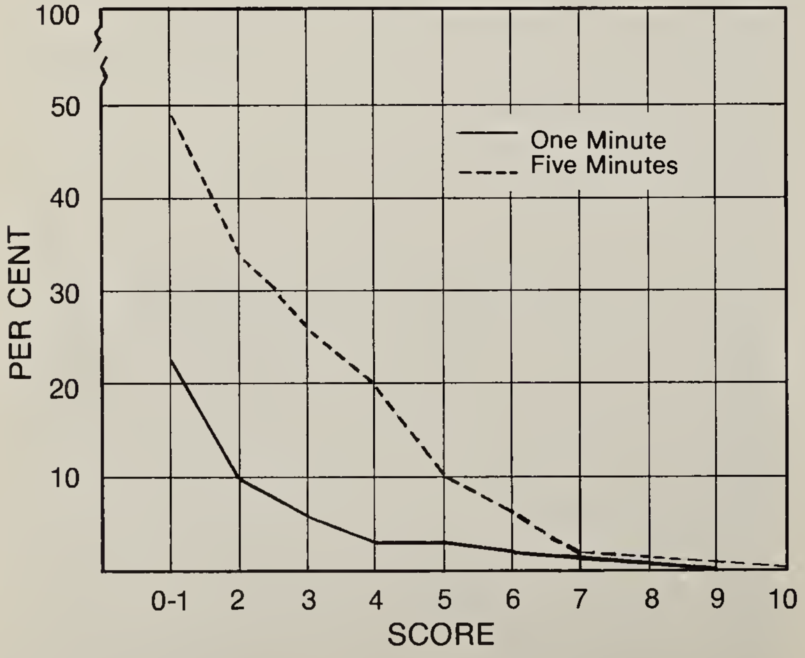

Figure 3. Percentage of 27-Day Neonatal Mortality Within Each Score at One and Five Minutes.

mal potential development, our assessment activities assume some meaning. As children with visual impairments usually manifest developmental delay, there is a high probability that psychological services, including assessment, will be needed. Psychologists may now undertake evaluation of very young disabled children, to plan meaningful programs for them, and to serve families who face the crisis of the child's diagnosis and "unusual" development.

Several philosophical issues are raised by the process of early assessment itself. First, many professionals are concerned about early "labeling" and premature diagnosis. Secondly, as all testing involves the sampling of behaviors, the fact that infants display a narrow repertoire of reactions delimits the amount of "hard data" which can be drawn. A third problem arises in the assessment process *per se*, as many available scales and measures rely upon the reports of parents and other child-care agents rather than on direct administration.

In order to address these issues, we must return to the basic purpose of the evaluation. If we utilize instruments which embody objective elements, and if we propose to yield a program (or, at least, assistance), early assessment provides a justification of standardized measurement. The "labeling" issue becomes irrelevant if the assessment process results in a program designed to ameliorate deficits and prevent future classifications. Similarly, with program goals in mind, the narrow spectrum of behavior observed in young children assists us in making highly specific recommendations. As to the third issue, with very young children, it is essential that any program design involve parents, siblings, and/or other caretakers. Including their reports in the assessment process can only aid in the implementation of the recommended regimen.

As you see, the entire assessment process assumes a different focus if the objectives are clearly child centered and intervention based. When problems are identified early in life, data collected as to their character and extent (where possible) and treatment plans formulated and executed for prevention of complications and attendant social handicaps, I believe the psychologist is engaging in the "highest order" evaluation, preventive assessment.

THE "ADORABLENESS FACTOR"

There are some technical problems which also arise when infants and young children are evaluated. Two of these problems are directly related to the tender age of the subjects. The first I would call the "adorableness factor". Young children are generally so cute that there is a natural tendency to be responsive and playful with them, rather than to be as objective as possible in framing judgments. Secondly, they are not yet at an age where they have internalized the desire to please by conforming to an adult's requests or presentations. Therefore, responses are frequently inconsistent and/or not in tune with specific measurement procedures. At our infant clinic, there have been children who have had to be rescheduled because their first response to the new situation was one of unconsolable crying, disinterest, and the like. Even when the infant's attention is engaged, they are highly vulnerable to distractions from both outer and inner stimuli. The psychologist who undertakes such assessment must be prepared for wet diapers, spitting up, rapid mood swings, and other unpredictables.

There are several major testing considerations when undertaking any assessment. Among them are validity, reliability, standardization, establishment of norms, and quantifications.* Psychologists are familiar with the necessity to analyze these factors in any measure; when infant measures are employed, however, the urgency of these considerations is even more acute. The purpose of "assessing the measure" concerns our desire to view behavior as objectively as possible, although we are aware that "pure" measurement is difficult even in physics and chemistry, much, much more so in the behavioral sciences. Nonetheless, instrumentation moves the observer further away from subjective impression and toward the objective "ideal." Those measures intended for use with infants are prey to impressionistic qualities (once again, the winsome and inconsistent nature of babies) and limited attention to validity issues. It is suggested that manuals and test research be carefully reviewed and all necessary caveats regarding the measures be included when reports are prepared.

Both reliability and standardization are affected by the inconsistencies of infant behavior. Furthermore, few infant scales purport to be predictive in nature. They provide insights into *current levels of functioning only*, (Bayley, 1969). There is, in fact, data which suggests a possible inverse relationship between early motor skills and later intellectual functioning (Lewis, 1975). The importance of viewing infant evaluation as dynamic and developmental (rather than the more traditional "fixed intelligence" notions) cannot be overemphasized.

WHY EVALUATE INFANTS? Having reviewed these assessment problems, one might ask "why evaluate?" The measures at hand yield neither prediction for the future, nor strongly reliable quantities, nor standard scores which are easily translatable into practice. Moreover, the instruments are difficult to administer and the problems of standard administration are legion. At the risk of being redundant, I would answer the question in three ways:

1. We need an assessment which will objectify the here and now developmental level of the young child;
2. The results should indicate a program of early intervention and, hopefully, amelioration, when developmental lag is discovered;
3. The earlier such data is gathered and all concerned (parents and professionals) are recruited to assist the developmental process, the greater the likelihood of success.

Psychologists face a dilemma when asked to evaluate any seriously handicapped child. We are often tempted to break standardization when sensory or motor impairments place tasks out of the usual reach of these subjects. If we yield to the temptation, we can no longer feel assured that we are, in fact, administering an objective instrument. On the other hand, if we adhere strictly to every rule, we often overlook important coping mechanisms which the subject has developed in order to perform at all. In addition, the norms may be rendered meaningless as appropriate rulers for these children, as subjects similarly handicapped were not included in the original norming sample.

SOLUTIONS FOR DILEMMA The dilemma has been confronted in several ways with pros and cons for each "solution":

1. Some authors have chosen to develop materials for assessment which are validated, standardized, and normed for a specific handicapped group only. Examples include the Blind Learning Aptitude Tests (Newland, 1961) for the blind, and the Hiskey-Nebraska Test of Learning Aptitude (Hiskey, 1966) for the deaf. An argument could be framed in favor of this approach around the solid comparative norms then available. However, many of these instruments provide narrowed behavior samples as a result of the restrictions of the disorder.

2. Occasionally, psychologists will adapt an existing instrument for use with handicapped children or establish new norms for use with a specific subgroup. Examples of adaptation in the field of blindness are provided by the Maxfield-Buchholz Social Maturity Scale (Maxfield & Buchholz, 1957), which is derived from the Vineland Social Maturity Scale (Doll, 1953), and the Verbal Adaptation of the Draw-a-Person Techniques (Chase & Rapaport, 1968). Sattler (1972) has reported on a spectrum of adaptations of intelligence tests for use with mentally retarded and cerebral palsied children. He states: "The results indicate that some modified tests can serve as substitutes for standard tests in the assessment of handicapped children." The advantages of adaptation include the preservation of the original test framework and functions tapped, the availability of comparative norms, and the relative familiarity with the procedures, engendering wider acceptance. A disadvantage appears in the development of these materials as the conditions which impede test administration are highly variable and populations are defined with difficulty. Social implications for acceptance of findings yield another drawback.

3. A number of authors have suggested that it is most realistic to administer the instrument as originally devised, thereby providing a true picture of how the subject functions under "real life" conditions in comparison with those who are nonhandicapped. They suggest that any special observation regarding the impact of the disability should be discussed as a separate part of the psychological report. Exposition of this point of view may be found in Anastasi (1954) and Louttit (1957). The strength of such an approach include the familiarity of the instruments, the potential for greater "integration" of handicapped individuals at local clinics, etc. The obvious risk, however, is that children will be placed in a "sink or swim" situation, with testing practices misused to demonstrate inabilities and provide barriers. Historically, psychological measurement has been used to justify exclusionary practices (recent lawsuits and court rulings have addressed such problems; see Mercer, 1972, and Garcia, 1972).

Combining Approaches

4. The position taken by such psychologists as Else Haeussermann (1958) includes elements of all aforementioned approaches. Mrs. Haeussermann developed a series of procedures which she calls a "structured interview." The materials and methods draw upon a wide range of standardized and nonstandardized tasks to "test the limits" of the child's ability to function. Her approach is similar to that of many psychologists now engaged in assessment of young handicapped children and probably best reflects current

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* A complete discussion of these considerations may be found in standard textbooks about tests and measurement, such as Cronbach, Lee J. *Essentials of Psychological Testing*, Harper & Row, 1960 or Anastasi, Anne, *Psychological Testing*, MacMillan, 1954.

"Most of the measures . . . described have elements which are of value for the psychologist embarking upon assessment of a handicapped baby or toddler."

practice (see, for example, Simeonsson and Weigerink, 1975). The benefits which accrue from combining a variety of instruments are many. Employment of a battery of measures is always preferable to a single test for behavioral assessment. It permits the psychologist to test more hypotheses during the evaluation process and to interpret a deeper pool of data. Subtests can be selected which specifically address the questions raised in any given case. Paradoxically, however, there is also the loss of some of the value of each measure, as any change of an instrument dilutes the findings. Furthermore, the selection process itself relies heavily upon the sophistication and clinical skill of the examiner, who must have mastered a broad testing repertoire.

No one solution is "perfect." Individual decisions may be made based upon situational needs and purpose. In general, it is suggested that psychologists will consider the severity of the child's disability. If sensory and/or motor interferences are minimal, option three could be most appropriate. When differential diagnosis of a possible multitude of problems is required, this writer would favor either adaptation or the specialized battery.

An urgent consideration remains. Knowledge of child development, particularly age expectations for appearance of milestones and behavioral features, is a necessary ingredient of the practitioner who evaluates young children. A recent training clinic demonstrated that background in developmental psychology cannot be assumed. Great changes in our vision of the growing child have occurred in recent years. Strong recommendation is made to visit the recent literature in the field prior to undertaking case evaluations.

Cattell (1940) was among the first authors to attempt an outline of infant assessment. Since that time, there has been a gradual progression toward "charting" development more specifically. Cattell, in his attempt to extend the Stanford-Binet downward in age, stressed "intelligence" and intellectual functioning. We are now aware that these early measures are not predictors of "intelligence," however defined, but, rather, indicators of areas of growth and possible difficulties.

WIDELY USED MEASURES Many instruments and techniques have appeared in the literature since 1960. Following is an overview of some of the more widely used measures. The list is far from complete, and readers are encouraged to seek out additional resources. Often, local centers and clinics amass their "kit" or collection of materials which draw upon numerous sources. Inclusion or exclusion below implies no value judgment; each psychologist will want to approach assessment based upon individual experience and preference.

1. Bayley Scales of Infant Development (Bayley, 1969): This battery provides a Motor, Mental and Behavior Scale for infants 0–30 months of age. It is an attractive suitcase of "toys," fun for the child and somewhat taxing for the examiner, who should be well-versed and speedy in administration. Excellent research went into production of validity, standardization, and norms. Nevertheless, the nature of the items often delimits use with handicapped children. The Behavior Scale helps objectify areas such as social responsiveness, attention, goal-directedness, and the like, and is an excellent resource whether or not the full scale is used.

2. Denver Developmental Screening Test (Frankenburg & Dodds, 1967). Intended as a gross screening device to discern problems early in life, the Denver is appropriate for use from birth to six years of age. Four major areas are assessed, gross motor, language, fine motor-adaptive, and personal-social. The procedures and materials are relatively uncomplicated, and the method of tabulating data and scoring are well designed and convenient. Limitations are minimal in view of its purpose, but for a psychologist wishing to formulate a plan, it is inadequate. As an adjunct measure of specific areas, it can be quite helpful. Potential users should review the authors' literature (Frankenburg & Dodds, 1967; Frankenburg, Dodds & Fandal, 1970; Frankenburg, Goldstein & Camp, 1971).

3. Instrument for Assessing Infant Psychological Development (Uzgiris & Hunt, 1966). Although still in the provisional stages, this research instrument is available in mimeographed form. The authors have delineated six scales, or "series," which assess development within Piaget's theoretical framework: I. Visual Pursuit and Permanence of Object; II. Development of Means for Achieving Desired Environmental Events; III. Development of Schemas in Relation to Objects; IV. Development of Causability; V. The Construction of the Object in Space; VI. Development of Imitation. Some of the tasks provide valuable additions to our assessment of the sensorimotor level of development (generally, under three years), and may be more appropriate with handicapped children than some Bayley items. Still in experimental stages, the various testing considerations cannot yet be discussed. A strength of the instrument is its approach to developmental questions from a newer theoretical vantage point.

4. Gesell and Amatruda's Developmental Diagnosis (Knoblock & Pasamanick, 1974): Building upon the long history of developmental analysis by Gesell and his colleagues (Gesell, Thompson, & Amatruda, 1934; Gesell, Halverson, Thompson, Ilg, Castner, Ames, & Amatruda, 1940, among others), these authors provide an assessment method which is structured according to age "zones" (four weeks, eight weeks, etc., 18 months, 24 months, etc., up to 72 months). At each level, specific tasks are administered which provide an ultimate developmental quotient. The scale is highly comprehensive, yet fairly efficient to administer. More attention is paid to handicapping conditions than in the other general scales. The psychologist should read the book, whether the scale is employed or not. A drawback appears in the concentration upon age-fixed levels.

5. Minnesota Preschool Scale (Goodenough, Maurer & Wagenen, 1940). This scale is not unlike the Cattell, in that it proposes to offer an IQ. The items are also similar, although they are grouped into Verbal and Non-Verbal Score categories. Norms range from one year to five years. It is a relatively simple, more sedentary measure to administer. It addresses cognitive issues only, and is highly weighted toward middle-class nursery school values. Although not widely used, some subtests yield meaningful information, and its use with youngsters having motor impairments might be advised.

6. Merrill-Palmer Scale of Mental Tests (Stutsman, 1931): Once widely used, this large compendium of a number of independent measures (matching, formboards, association, and others) is mentioned only because, once in a while, one or more of the activities for children 24–63 months of age provide insight into a delineated hand-eye skill. The effectiveness of these tests are, however, greatly diminished by the current availability of similar materials as commercial toys and the dated norms.

7. Stanford-Binet Intelligence Scale (Terman & Merrill, 1960). This "grand dad" of the U.S. psychological test movement endures in many areas as a preferred method, particularly with young children. It is intended as an intelligence test only, but early levels include considerable motor influence. (The earliest level is two years, proceeding at six-month intervals to year six, then by variable intervals to adult levels). It is good to include Stanford-Binet items in a battery, as most experienced psychologists have given it often and thereby internalized norms. However, there are too few items at each level, and they are far too global, for it to be considered adequate for our purposes when used alone.

8. Nebraska Test of Learning Aptitude (Hiskey, 1955): Although this test was developed for use with deaf children, the author has established norms for the hearing as well, and the collection of non-verbal subtests has wide applicability for children over three years of age. Subtests for use at young levels include Bead Patterns, Memory for Color, Picture Identification, Visual Memory Span and Picture Association. For each, a mental age equivalent results. As many handicapped children are nonverbal, use of this valuable addition to the repetoire is encouraged. Unfortunately, the poor quality of the pictorial sitmuli is a serious weakness.

9. Wechsler Pre-School and Primary Scale of Intelligence (Weehsler, 1967). As the most recent addition to the library of Wechsler Scales, the WPPSI provides benefits in format and comparability with other scales. The age range for administration is between four years and six and one-half years, therefore, it is of only passing interest in this article. It is a strong instrument for pre-school intellectual abilities; both a Verbal Scale and a Performance Scale are provided and IQ Scores yielded.

10. Vineland Social Maturity Scale (Doll, 1965): The Vineland is another old favorite. It was constructed at a state training school to assess social skills in retardates. Everyday expected activities are listed for each age level. They fall into factors of self-help, socialization, communication, and occupation, beginning in infancy. Serious drawbacks appear in the global nature of the questions, the difficulties of standardization, and the fact that scoring is based upon parent report. In spite of these factors, the examiner may use much of the valuable data yielded to assess the social milieu of the child. Several authors have attempted to broaden or update the Vineland (e.g. Gunzburg, 1966) in his Primary Progress Assessment Chart of Social Development.

11. Peabody Picture Vocabulary Test (Dunn, 1965): Four pictures are presented to the subject, and one is to be chosen as "defining" the word offered by the examiner. In this way, the Peabody Picture Vocabulary Test reflects vocabulary from three years upward. Although MA and IQ figures result, this measure taps only one area of intellectual functioning. It is a fine, useful tool with non-verbal children and easily administered. It is somewhat related to other pictorial scales which will be cited in the following section. It may add a dimension to a battery; findings should not be reported as solitary reflections of ability.

12. Illinois Test of Psycholinguistic Abilities: (Kirk, McCarthy & Kirk, 1968): The Illinois Test of Psycholinguistic Abilities offers a far more sophisticated analysis of language function than any instrument previously listed. The design of the profile on which findings are plotted aids in analysis and indicates remediation. Auditory vocal and visual-motor findings are provided on the representational and automatic levels, as derived from scores on 12 subtests (auditory reception, visual memory, etc.). The test may be administered to children between the ages of two and one-half and 10 years. Specific subtest data, in age and scaled scores, may add to a total diagnostic picture of a young handicapped child. The battery is usually pleasant for the subject, but time-consuming and the theoretical notions behind some of the tasks might be questioned.

As previously stated, the measures cited above provide only a beginning. A recent bibliography (Tadscript #2, 1973) listed over 100 measures for possible use with infants and preschool children. There are many measures designed to assess school readiness, such as the Preschool Inventory (Caldwell, 1965) and to detect early signs of learning disorders (e.g., McGahan & McGahan, 1967). Innumerable specialized tests for the preschool years are also available.

Most of the measures which have been described have elements which are of value for the psychologist embarking upon assessment of a handicapped baby or toddler. Adaptations such as those suggested by Sattler (1972) may be needed. As all measurement technique is sensitive to some individual differences, the examiner should feel encouraged to use whatever "works" for framing hypotheses.

TECHNIQUES FOR HANDICAPPED

It is noteworthy that a number of the authors listed above (Doll, Dunn, Kirk, Terman) are famed for their interest in special education and exceptionality. Several measures were prepared with specific disability groups in mind. The following list includes those techniques which are more pointedly designed for assessment of handicapped children.

1. Griffiths Mental Developmental Scale (Griffiths, 1954): Devised in Great Britain, these scales are used there to assess areas of growth in retarded children, 0–2 years. Included are scales in Locomotor, Personal-Social, Hearing-Speech, Eye-Hand, and Performance domains. It is listed here because the materials are far less visual in nature than those on the Bayley, and the verbal aspects are highly appropriate with young visually impaired children.

2. Gesell and Amatruda's Developmental Diagnosis, Section on Visual Disorders (Knobloch and Pasamanick, 1974): The Gesell Institute has had a long-standing interest in visually handicapped children (Gesell, et al., 1940, p. 289; Gesell, 1953). The most recent volume includes a substantial section on the subject, with illustrative case histories. The revised developmental schedule is appropriate, omitting some visual or other unrealistic items, as a tool with multiple handicaps, as well. Caution is advised, however, regarding the "fixed" age levels; handicapped children, particularly those with no or little vision, rarely develop all milestones "on time." The Developmental Diagnosis should offer insight into sequence, trends, and learning rate in these cases rather than firm age-equivalent ratings. If the child was born prematurely, further age-correction is suggested.

"Clinicians who work with young children risk losing a valuable resource in the assessment process if the family is not integrally involved throughout. Training of these children takes place largely at home."

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3. A Social Maturity Scale for Blind Preschool Children (Maxfield & Buchholz, 1975): This adaptation of the Vineland provides insight into similar areas of social development. It has been widely used with young blind and visually impaired children, although this writer prefers the Vineland if the child uses sight as a major sense modality. The scale includes a slightly greater number of items at the infant level, and the norms specific to blind children are helpful. As with the Vineland, it should be remembered that these global socialization activities represent only one facet of development and this scale should be one of a number of measures in the assessment.

4. Interim Hayes-Binet Scale of Intelligence (Hayes, 1942): This direct descendent of the Stanford-Binet occupies the same "grandparent" status among workers for the blind. Most of the items are precisely the same as those in either of the old Terman scales (Forms L and M, Terman and Merrill, 1937); the combination permitted elimination of those items which required vision. Some new items are added. For the most part, the requirements of the subject are highly verbal in nature. Strong verbal weighting is not an unúsual quality in assessment methods for the blind; for the pre-school age group, however, this factor constitutes a serious deficit in the use of this instrument. Verbal development in young visually impaired children varies greatly; at the time Hayes undertook the special norms for this instrument, the population of blind children was somewhat more homogeneous. The items themselves are quite dated. Publication of a new version of the Hayes-Binet, the Perkins Binet is anticipated (Davis, 1968), and will add valuably to our resources. Meanwhile, the Hayes-Binet can be employed with caution at three years of age and above.

5. Columbia Mental Maturity Scale (Burgemeister, Blum, & Lorge, 1972): For children over three who have good usable vision, the CMMS is often more effective, owing to the size, clarity, and coloration of the figures, than the Peabody Picture Vocabulary Test. This writer has used the CMMS, which involves large stimulus cards, on the floor with young multiply handicapped children. The task is simple and consistent throughout the test, to point out the one item which does not belong with the others. For handicapped children, the test may be used as a readiness screening device, but it is not recommended for such use until approximately four years, as it is difficult to interpret a small number of accurate responses.

6. Pictorial Test of Intelligence (French, 1964): The means of administering the French is not unlike that for the Peabody Picture Vocabulary Test, with wider spacing of the black-and-white figures. The distinct advantage of this test is that it is comprised of six subtests, each tapping a different area or function: Picture Vocabulary, Form Discrimination, Information and Comprehension, Similarities, Size and Number, Immediate Recall. As with the Columbia Mental Maturity Scale, the French (as it is popularly called) requires sufficient visual acuity to use large outline drawings. Both tests are non-verbal for the subject, although they assess areas of inner language function, which is why they are included as tests for handicapped children. The format of the French, wherein the subject views the cards on a "reading stand," is particularly adaptable for visually limited children through age eight. In spite of its varied nature, this measure should also be given as part of a battery, as the administration method remains constant.

7. Structured Interview (Haeussermann, 1958): As previously discussed, Else Haeussermann has compiled scaled measures particularly adapted to the special needs of handicapped children. The levels of assessment are two to six years; the areas include language comprehension, object recognition, body awareness, mathematical and structural concepts, memory and recall, etc. Standardized instructions are provided in Chapter 8 of the book, and a kit of materials is available. Special instructions are offered for a variety of disabilities including hearing loss, visual problems, and motor impairment. A decided asset in the use of this approach is the opportunity to draw upon the extensive and rich experience of the author, particularly regarding adaptations for individual disorders. While the Structured Interview provides age-level equivalences, it does not include normative comparisons. It is therefore valuable as a child-centered assessment tool, compatible with other measures.

8. Assessment of Movement (Cratty, 1971): While Cratty did not intend his methods as a standard measure, the motor milestones delineated in this excellent volume provide a type of "scale" against which the young visually handicapped child's activities may be assessed. When used conjunctively with the Bayley Motor Scale, and as a follow-up for older children, a combination of formal and informal measurement is yielded. Based upon a strong theoretical exposition, Cratty provides activities designed to assess spatial relationships, body image, cognition, and movement. A series of sequential, planned motor activities are offered, so that the assessment can be immediately translated into recommended ameliorations. Because movement in space and attendant activities are urgent cognitive issues for young blind and multiply handicapped children (Cratty's methods begin in early infancy), this volume is seen as irreplaceable prerequisite reading for any practitioner who would wish to evaluate such children.

9. Verbal Adaptation of the Draw-A-Person Techniques (Chase & Rapaport, 1968): Body-image development is of particular relevance to the advent of many skills (i.e., visibility, self-help, play) for the blind or visually impaired child. Building on a body of literature regarding the usefulness of figure drawings as revealing cognitive and affective data, the authors experimented with verbal reports of inclusions in such drawings. Findings suggested that the technique could yield information regarding self-concept as well as intellectual level. A similar projective instrument is found in another research report (Witkin, Oltman, Chase, & Friedman, 1971) using clay models. Although that approach has not been studied with very young children, so that there are no contrasting norms, it has been added to a battery informally with fairly similar results to the VDAP.

10. Diagnostic Checklist for Behavior-Disturbed Children (Rimland, 1964): Young blind children sometimes

manifest behavioral symptoms analogous to some features of early infantile autism (Chase, 1972). While these symptoms rarely signify the true syndrome, affective problems such as self-stimulating activities, lack of interactive emotional growth, and unusual language patterns are developmental elements which must be evaluated and addressed. The Diagnostic Checklist allows the psychologist to take a "symptom count," and to place the child's affective functioning along a continuum between autistic (severe end) and non-disturbed. Other levels of disturbance may also be differentially diagnosed. The scale relies upon parent reports of specific behaviors, administered usually below five years of age. Having used the Checklist in a variety of situations, both research and clinical, this writer recommends it whenever emotional difficulties are suspected.

11. The Dimension of Temperament (Chess, Korn & Fernandez, 1971): Another research study, that of rubella-infected children, by these authors, contributes a method of assessment along a somewhat different dimension. In addition to the more traditional measures of intellectual and social functioning, the authors evaluated nine temperamental attributes of the 243 post-rubella children studied. They are: activity level, rhythmicity, approach-withdrawal, adaptability, quality of mood, intensity of reaction, threshold of responsiveness, distractibility, and attention span/persistence. The observations gathered according to recommended procedures (Thomas, Chess & Birch, 1968) indicated vulnerability to behavior disorders. While not a formal scale, this device assists in a qualitative evaluation of emotional state.

12. Language and Learning Assessment (Bangs, 1968): There are many formats available for language development assessment (see, for example, Barry, 1961, for an excellent procedure with suspected aphasia, or Berry, 1969, for a comprehensive compendium of instruments). This particular book is recommended owing to the design of the diagnostic process and the ease with which findings are translated into concrete suggestions for treatment. Some items are taken directly from other measures, adding to the strength of the norms and standardization. In addition, a useful history form is included for parent report. Another feature which recommends this work for the psychologist wishing to assess handicapped children is the section on hearing impairments and the subsequent discussion of a variety of disorders.

INFORMAL ASSESSMENT MATERIALS

In addition to those measures listed, a wide array of materials are available for informal assessment. Some results from research studies other than those cited, for example, the Multiple Disabilities Project at Syracuse University (Curtis & Donlon, 1970) provides observational rating scales in eight areas (adjustment, communication, etc.) which grew out of their videotape assessment procedure. The new and growing field of orientation and mobility also provides some methods for assessing movement in space at a young age.

Other research reports suggest more effective use of existing instruments. An example might be found in a study of the use of the ITPA with partially sighted subjects (Bateman, 1963). Recent literature in the training of low-vision efficiency (Barraga, 1964; Rex, 1971) suggests additional measures for specific use with children who have very limited acuity. Field research, such as that undertaken by Halliday (1970), is extremely relevant. In her volume, one finds age-appropriate milestones and activities for visually impaired infants and young children. While not a "formal" measure, the structure of these guidelines in sequential order lends itself to employment for assessment. Another excellent resource is Scholl (1973), who reviews the literature and proposes interventions for young visually handicapped children.

Teachers often develop informal measures which provide insight into skill development. Such devices are neither standardized nor do they provide norms. However, an evaluation of style and rate of learning may be gleaned. Maeser (1969), as an example, has created a list of skills with structural toys (beads, blocks, sorting, etc.), in order of difficulty, for very young or low-functioning visually impaired children which has been helpful to this writer.

History Taking

No discussion of the assessment process would be complete without attention to history-taking. The psychologist may wish to devise a form which parents fill out prior to the evaluation session, or to use a standard form used in many agencies. Information regarding birth history, family constellation, medical factors and evaluations, social history, and current questions/problems should be included. Prior evaluations should also be requested. If a child is visually handicapped, opthalmological information is needed. Similarly, any other disabilities should have been delineated by appropriate specialists. Elements of the history are usually integrated into the report, if germaine, unless parents specifically request confidentiality.

An added dimension is offered by a family assessment. Clinicians who work with young children risk losing a valuable resource in the assessment process if the family is not integrally involved throughout. Training of these children takes place largely at home. Family interactions are often strained by the "crisis" of having a handicapped child (Ross, 1964). Recommendations are rendered meaningful when the family constellation and "style" are considered for their execution. Frequently, several sessions of family counseling and/or family therapy is an invaluable resource for the evaluative processs.

CONSTRUCTING A PROFILE

Once we have administered a meaningful battery of measures to a young visually handicapped child, the psychologist outlines a profile of areas of relative strengths and weaknesses. In addition, it is helpful to have asked the family to review the child's history, and to attempt to capture a sense of the family's interactive style. It is important to know something of each family member's reaction to the child's handicap. Other home resources which bear assessment include the range of exploratory behavior expectations of children in that area, and the level of stimulation available to the child on a day-to-day basis.

Having gathered these data, the psychologist is in a position to formulate report which leads directly to program planning. Recommendations are made, where needed, for home training, specialized professional training, and/or clinical assistance. Developmental assistance and stimulation might be suggested to be undertaken by the parents, by local public facilities such as day care centers or nurseries, or by professional specialists. In very rare cases residential attention would be advised.

Often, the need for additional assessment will be uncovered. Referral might be made to specialists including neurologists, ophthalmologists, orthopedists, and the like. Mental health interventions, such as parent counseling or family therapy, may be needed. Suggestion that the assistance of related practitioners, such as physical, occupational, or speech therapists, be enlisted is sometimes made.

Of greatest value, however, are the recommendations, drawn from the scales themselves, of child management efforts. For example, if the child's lag is in the motor area, parents and professionals can be steered toward that developmental sequence. Where language impairments are noted, specific activities such as naming, use of pictures, environmental experiences, etc., should be stipulated. Behavioral findings may also be translated into a program of management, reinforcement schedules and training designs. Developmental history sometimes points toward interventions, in cases such as eating disturbances where chewing has not been established, or toilet-training efforts prior to solid food digestion.

Illustrative Case Study

Kim* was evaluated in the Spring of 1974 at the request of the state agency which serves blind and visually handicapped individuals. He was then approaching three years of age and manifesting developmental delay. His family immigrated to this country from Asia, and both parents are employed in high-level scientific positions. Kim is cared for by a distant relative who was brought to this country to serve as *amah.*

The visual disorder is optic atrophy of unknown etiology, diagnosis having been made at three months of age. His acuity has not been determined, but he appears to have some close-range visual skill. Birth history was uneventful, and early motor milestones were attained appropriately. He did not walk independently, however, until 15 months. Early communication skills (babbling, imitation) occurred at expected ages, but later language remained fixed at the level of short phrases and some echolalia. As two languages were used at home, Kim's vocabulary included words and phrases of each (the amah, who was prime caretaker, speaks little English). Self-help activities were slow in developing; when Kim was first seen, he was neither toilet trained nor eating independently. Social development was minimal, and Kim engaged in tantrums and crying when thwarted. Although exposure to other children had been limited up to that point, when in the company of others his age he engaged only in parallel play.

The Bayley Scales, the Vineland (mother reporting), and a structured observational interview were administered. Although many items of the Bayley seemed inappropriate, overall findings tended to place Kim's development at about the two-year level in motor skills, the 15-18 month level on the mental scale, and at a fairly infantile, egocentric point behaviorally. Vineland results yielded a social age equivalent just below two years. Observation revealed responses at a higher level when formal requests were not made of him, and a fairly rapid rate of learning a new task (turning on a flashlight).

Interpretation included discussion of the multiple factors involved in his delay: suspected neurological factors, cultural/familial issues which did not appear to foster optimal development, and regressed emotional functioning. Recommendations were made for neurological evaluation, for play opportunities, preferably at a therapeutic nursery, for encouragement of large-muscle activity (particularly swimming, which Kim favors), for a structured behavioral approach to self-help activities, and some rearrangement of care-taking activities with parent counseling.

Follow-up evaluation, seven months later, was undertaken by another psychologist. She employed items from the Merrill-Palmer Scale, Denver Developmental Screening Test, and the Vineland. By that time, Kim was enrolled in nursery school, independent eating and toilet training had been accomplished via a consistent and firm approach, and language development had improved. The psychologist further observed additional use of vision and improved fine-motor skills. Nonetheless, results remained far behind age expectancies, and, because his rate of development had not kept pace with his chronological age, he appeared even more delayed. Once again, discussion and recommendations included a request for neurological work-up, attention to issues of emotional growth, and behavioral/educational prescriptions.

Kim was observed recently when an in-patient pediatric and neurological study was in progress. In addition, his parents (one year after the initial evaluation) sought counseling. Although improvement is seen in all areas, particularly language of self-help skills, a specific training program remains a necessity. Planning is now underway to provide specific instruction to the parents as well as a specialized day training program.

This case exemplifies several points addressed above. Kim appears mentally retarded to the casual observer. Without careful evaluation, neither the family's perceptions that Kim's problems were all related to his visual defect nor a professional's conclusion of retardation would have engendered change. It was necessary to look at his functioning area by area to plan meaningful, sequential interventions. Both psychologists employed batteries of diagnostic and interview techniques. In both cases, specific suggestions were possible in self-help and emotional realms. While findings were not "strict" in measurement terms, the total developmental assessment offered practical assistance. No "labeling" resulted, and Kim's development now receives ongoing review according to fairly objective criteria. It is hoped that such provisions will ultimately be available to all infants and young children experiencing problems in maturation.

In order to effectively plan for services for young handicapped children, objective assessments are necessary. Many tools are currently available for a current functional evaluation of such children. Although we must be cautious in their use, they represent the preventive value of behavior sampling. Using such measures, we may put our findings to use as guideposts for intervening early and preventing additional handicaps. The psychologist would be wise to utilize a battery of assessment techniques so that a profile of abilities, strengths, weaknesses, and frank disabilities is yielded. Many of the scales which have been described provide opportunities to "tease out" the effects of the handicap, but true differential diagnosis is an ongoing process. Finally, because of the toy-like nature of the materials listed, it is suggested that, like the person asking how to get to Carnegie Hall, any psychologist wishing to assess very young children "practice, practice, practice!"

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*A pseudonym and some case specifics have been changed, to preserve confidentiality.

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Answering the Questions of the Psychologist Assessing the Visually Handicapped Child

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Abstract: *The most common question asked by the psychologist who is faced for the first time with assessing a visually handicapped child are answered. The 15 questions include such areas as the required information concerning visual condition, background of the client, test conditions, the role of the parents, classroom observation, behaviors observed during testing, evaluation of test results, expectations of parents and teachers, and modification of a child's inappropriate behaviors.*

■ It is my intention in this paper to provide information, assistance, and advice for those psychologists who have not previously assessed visually handicapped school-age children or have questioned their competencies relative to providing such an assessment. It is becoming apparent that in an increasing number of states, pupil personnel teams in local school systems, often including a psychologist, are being required to assess, totally, children with special needs, including the visually handicapped, for inclusion within the local public school setting. To expect "experts" with experience in assessing visually handicapped children to provide the service to the exclusion of utilizing local community resources is economically unsound, time-consuming, and results in the possible refusal of accepting one's professional responsibilities. That is, it encourages and supports the "expert" with a sagging ego and identity problem to consider himself as the provider of all answers and supports the need of local psychologists to deal only with the familiar and to rely solely on past experiences.

This statement does not suggest that the fears and/or questions of psychologists are not legitimate. To the contrary, I would be concerned if a psychologist with no experience with the visually handicapped assumed there were no problems or special considerations involved and routinely administered instruments, drew conclusions, and advised parents and school personnel. In addition, the knowledge and experience required for an assessment of multiply handicapped children with a visual impairment are extensive and would require the consultation or direct service of the "expert."

Nevertheless, answers and advice that allow local psychologists to become increasingly involved, particularly with visually handicapped and totally blind children who are not severely multiply handicapped are available. I shall attempt to phrase and answer adequately those questions that have been (or should have been) asked of me over the years as a result of my consultations with other psychologists in a variety of settings—public, private, educational, and clinical.

WHY TEST?

1. "Why should I test the visually handicapped?" As a psychologist, you are and will continue to be concerned with the diagnosis and remediation of children's problems, including those of children with special needs. You are concerned with the total needs of a child, a visual handicap being but one of the characteristics of the child. In addition, you possess skills which are essential to the total understanding of and planning for meeting the needs of children. Moreover, you are a member of a team comprised of educators, the health profession, parents, and support personnel, including those with expertise concerning the visually handicapped.

2. "What need I know relative to the client's visual condition?" First, you should be informed of the etiology and prognosis of the visual handicap in order to understand the level of current functioning and to suggest appropriate remedial procedures. For example, is the condition genetic in origin, reversible, correctable, or progressive?

Second, you should be aware of the amount and quality of vision, if any, possessed by the client. Is the client a print, large type, or braille reader? Is the vision monocular or binocular? Does light or glare affect his vision? Is the vision tertiary and used as a "back-up" for the other senses?

Third, you should be aware that if the client possessed vision during the first five years of life or longer, visual memories will be established although they may be distorted by time and by the quality or degree of that vision. If the client became totally blind before the age of five, visual memories will not be possible.

PARTIAL VISION Fourth, you should be aware that children with partial vision have difficulty with figure/ground requirements. Extraneous or confusing stimuli within pictorial representations should be eliminated or not presented. Identifying elements against a confusing background should be avoided.

Fifth, you should be informed of the client's field of vision. Various eye conditions will require the client to "see" out of one quadrant of the eye, or either central or peripheral vision may be affected.

Sixth, you should be aware that there is a difference between what can be seen and the ability to understand what is seen, differences in awareness and sensitivity; this is applicable to all school-age children. It has been verified repeatedly that children with partial vision may also possess a learning disability distinct from the visual impairment. Resist the temptation to assume automatically that children who possess typical visual perceptual problems do so because of their limited acuity.

Seventh, keep in mind that children with partial vision will require additional time to complete visual tasks. Tracking, keeping one's place on a page of print or symbols, and shifting focus points all require time.

3. "With what background information about the client should I be concerned?" In addition to information relative to the visual handicap, there is a need, as with any child, for a complete history. Information received from medical, developmental, social, educational, and family histories are considered essential in order to comprehend the total needs of children and to plan for appropriate remediation.

Test Conditions

4. "Are there special test conditions?" In addition to the expected conditions conducive to obtaining optimal test results, there are several considerations. Lighting should be of sufficient intensity but without glare. Children with a sensitivity to light should not be penalized in the interest of providing a high degree of illumination. It would be best to provide an oblique light source from the side of the client's most efficient eye. Flickering of the light source should be eliminated. In addition, allow the client to determine the distance from the test materials with which he feels comfortable and whether or not to use his glasses or low vision aids. Moreover, insure that extraneous visual and/or auditory stimuli are eliminated or reduced as much as possible. Remember, some children, visually handicapped or not, may utilize distractions to avoid difficult tasks.

5. "Need I talk with parents before testing?" As you are aware, parents have a "right to know" concerning programs and services involving their children. In addition, stipulations are being made, and rightfully so, requiring *informed* consent prior to the delivery of services. Moreover, and of utmost importance, a face-to-face discussion with parents prior to service is of considerable diagnostic value toward understanding the child and meeting the needs of the most important adults in his life, the parents. Lastly, whereas it is true that you have had little exposure to a visual handicap, you are aware of and sensitive to the feelings and behaviors universal to all people, e.g., loneliness, isolation, fear, anxiety, defense mechanisms, and coping behaviors.

Classroom Observation

6. "Are there special considerations involved in classroom observations?" In addition to the earlier question pertaining to the client's visual condition, you will want to observe, as with all clients, the interactive process among the client, classmates, and teacher. Observe the demands made upon the client by the teacher and pupils. How does he respond? Is play parallel or cooperative? How does the client respond to frustration and difficult demands, or are exceptions made because of his handicap? Are they realistic? Does the client and/or the teacher and pupils accept or react adversely to the visual handicap? What serves to reward or reinforce the client's appropriate behavior? How long is his attention span? What distracts him? Lastly, what concerns and questions are being expressed by the teacher? In other words, how may you be of assistance?

7. "Do visually handicapped children possess more emotional difficulties?" I feel it has been fairly clearly established that a visual handicap is not the etiology of emotional difficulties. However, the effect of the condition on family members and meaningful people in the client's life may cause them to provide inconsistent responses, rejection, over-indulgence, ambivalent feelings, and stress. These conditions, whenever they occur, may result in emotional difficulties for the client, whether he is visually handicapped or not. It is indicative of the attitude toward blindness that the self-concept of visually handicapped children tends to be more extreme than that of their seeing counterparts, i.e., they possess more feelings either of low esteem or denial of any limitation. It is common, moreover, for visually handicapped children with useful vision to have difficulty in establishing who they are and in receiving visually feedback concerning their behaviors.

BEHAVIOR DURING TESTING 8. "Are the test behaviors of the visually handicapped similar or different than for the seeing?" It is probable and common for visually handicapped children with useful vision to lose visual efficiency when under stress or tension, particularly for those with nystagmus (lateral or vertical rapid eye movements) or limited field of vision. Consequently, it is imperative that rapport be established, test anxiety reduced, and support and encouragement offered. Providing realistic feedback as to the client's performance as he progresses is of assistance in minimizing anxiety.

In addition, it is helpful to observe the ease or difficulty with which the client separates from his environment and his need for dependence or independence when traveling. Moreover, be aware of his response to failure and reactions to difficult tasks. Does he avoid failure by finding it difficult to say, "I don't know," by giving up easily, by rambling on and on, or by becoming distractible? Will he persevere even on difficult tasks? Is body tension evident? Does he sub-vocalize as a compensatory endeavor? Are varying types of encouragement effective and are they more useful when a task is being attempted or upon its completion? Lastly, observe the client's motor problem-solving skills. Are they random, trial-and-error in nature, or planned and organized? Does the level of difficulty influence these skills?

9. "Would you explain the meaning of those body motions?" I assume you mean what are often referred to as "mannerisms" (rocking, head-rolling, finger-flicking, light-gazing). Please do not call them "blindisms." Autistic sighted children exhibit similar behaviors. Needless to say,

I am not implying that blind children are autistic by nature. Briefly, autistic children reject the environment and turn inward for satisfaction. On the other hand, many blind children are denied access to their environment and during moments of boredom or stress turn inward for satisfaction. It is recognized that studies and theories relative to causation are many, varied, and often contradictory. Various explanations have been offered, including sensory arousal, neuro-physiological deficits or accommodations, understimulation and experiential deprivation, transitional adaptation in development, and reactions to faulty adult-child relationships. It is important, however, to differentiate between those children who reject attempts to provide satisfaction from without and those who cease the behavior when adult or peer interaction provides an alternative.

Although these mannerisms may not be pleasing to the eye, it is essential to view them as possible symptoms of sensory or social deprivation and they should be treated accordingly. Attempts to eradicate them without considering their cause will result merely in the substitution of one mannerism for another. It is recognized that a paucity of treatment methods exist. However, a recent study utilizing a behavioral procedure named the "Overcorrection Method" reported success in achieving rapid and enduring effects. Most emphatically, more research is needed.

IQ AND VISUAL HANDICAPS

10. "Are the I.Q.'s of the visually handicapped relatively the same as their seeing counterparts?" Essentially yes, but several qualifications are necessary. As with all children, it is essential that the profile of subtest scores be considered rather than the intelligence quotient by itself. Frankly, the intelligence quotient may be useful for those with a need to categorize clients, but I consider the procedure useless to educational programming, understanding needs, or planning remediation. On the other hand, information pertaining to levels of strength or weakness (conceptual, verbal expressive, sequential, spatial, auditory, and visual memory abilities) is appropriate and of assistance when programming or remediating. Moreover, it is important to remember that tests of intelligence reflect current functioning and inferences regarding "potential" must be made with considerable caution, if at all.

With regard to the visually handicapped, experience has shown that some children with no useful vision tend to score lower on those subtests assessing conceptual skills and higher on those that assess short-term auditory sequential memory for non-meaningful information (Digit Span) compared to their sighted peers. It is important to remember that verbalization should not necessarily be equated with the ability to conceptualize. Children may possess a verbal veneer but often lack the experiential base necessary for conceptualizing the world around them. It is often apparent that they exhibit experiential and developmental lags; they may have been deprived and are often overprotected. In addition, it would be a misconception to assume that their higher auditory memory scores reflect an inherent superiority. In all probability, it is explained by their need to perceive the world auditorily.

One word of caution: it is imperative that a distinction be made among difficulty in auditory memory itself, difficulty because of external distractions, and difficulty because of distraction by inner thoughts or concerns. A poor performance on Digit Span may not necessarily reflect a lack of ability to remember information received auditorily.

Factors Affecting Performance Scores

11. "What factors affect the performance scores of the visually handicapped?" I am assuming that you are referring to the visually handicapped child with considerable useful vision who nevertheless qualifies for services. (New Hampshire, for instance, provides complete educational services for those with 20/60 visual acuity or less in the better eye, after correction.) When utilizing the Wechsler Intelligence Scale for Children (WISC), for example, a psychologist should examine the responses of all clients, visually handicapped or not, to the Performance Scale in terms of various ability areas, e.g., spatial, visual discrimination, visual sequencing, speed eye-hand coordination, and visual memory abilities. Results of the examination are determined by observations and by combinations of scores.

Testing the visually handicapped child with considerable useful vision poses several important considerations, however. First, it would be an error of judgment to decide, for example, that the visually handicapped child possesses poor speed eye-hand coordination (Coding) and/or poor visual sequencing abilities (Picture Arrangement and Coding) as a result of test performance if—and this is an important "if"—the child had difficulty with figure-ground considerations, could not discern detail against a confusing background, and/or had difficulty shifting focus points from one part of the page to another. In this case, low scores do not mean a lack of ability but visual functioning deficits.

OBSERVING TASKS

There is no substitution for awareness of possibilities and it is important to observe the visually handicapped child carefully as he performs the tasks. Accordingly, it is frequently necessary to eliminate a subtest score and pro-rate the remaining scores to achieve a Performance Scale I.Q. Score. Even if it is not possible to calculate the I.Q. score, I would advise administering the Performance Scale in order to obtain valuable diagnostic information concerning the utilization of vision and possible functional difficulties. The observations could be of assistance to teachers in planning remedial procedures.

Second, as I mentioned earlier, do not automatically assume that difficulties in visual perception are a result of limited visual reception. The difficulties a visually handicapped child has with regard to rotating blocks with diagonal colors (Block Design) are probably perceptual in nature, particularly if his performance on the subtest assessing his ability to discriminate visually essential and nonessential elements within a pictorial representation (Picture Completion) is average or better for a child of his age. Moreover, by closely observing the visually handicapped child take the Bender-Gestalt Test, you will be assisted in your determination of whether his difficulties are receptive or perceptual in nature.

Test Time Limits

12. "Should I adhere rigidly to time limits?" Your main emphasis should be to determine the power and performance of the visually handicapped child. Since it is readily accepted that additional time should be allowed for achievement tests, why, then, should we penalize the visually handicapped child on tests of ability when what we are interested in is estimating current functioning? If we adhere rigidly to time limits, are we not merely assessing

ability to perform within a time span? Perhaps a rule of thumb might be that if the client is approaching a solution to the test problem as the time limit approaches, allow him to finish and score accordingly. However, if the test problem is not understood or cannot be resolved regardless of how much time is provided, terminate the task at the completion of the time limit.

PARENTS' AND TEACHERS' EXPECTATIONS 13. "What are parents' and teachers' expectations of me?" Perhaps I can best answer your question by paraphrasing the expectations of parents and teachers as I have come to understand them over the years. The following requests are valid and must be fulfilled:

a. See my child as a total child with many needs, strengths, and weaknesses.

b. Help me to use my strengths to understand and help this child.

c. Be prompt, give adequate explanations, talk in terms I can understand, and give me your recommendations.

d. Treat me as a co-worker, as a competent person, and help me to understand my strengths, biases, and limits.

e. Help me to change my behavior if I so desire by giving me concrete help in my day-to-day contacts, but, above all, don't belittle my efforts by withholding information or talking "over my head."

f. Let me make the final decisions; I have got to live with myself and my decisions.

g. Don't imply, by your words or behavior, that it is all right to express my fears and concerns and then "back off," "tune out," or "take issue."

h. Keep in touch; don't drop out of sight.

Invalid Expectations

On the other hand, the following expectations are invalid and if allowed to go unrecognized, will be a negative influence upon the relationship:

a. You are the expert. Tell me what to do and I'll do it.

b. You are the expert; I don't need to talk with anyone else. Give me your advice concerning my child's academic, medical, social, and emotional needs; you are the answer to all of my prayers.

c. You can't help me or my child; you have never been blind or raised a blind child.

d. I don't have to worry any more; someone else is going to figure out this child and do something.

e. I don't need to tell you anything; he's on his own. I've got my own life to live.

f. How can you ask those questions or make those suggestions? Don't you understand? What can you expect? After all, he's visually handicapped.

INAPPROPRIATE BEHAVIOR 14. "Are there special techniques for modifying the inappropriate behaviors exhibited by visually handicapped children?" Behavior management techniques are often utilized effectively by parents and teachers with all children, visually handicapped or not. Obviously, success depends on a thorough identification of the behavior to be modified and of what has served to reinforce that inappropriate behavior and on arranging the consequences for appropriate and inappropriate behaviors.

There are four basic methods effective in eliminating inappropriate or undesirable behavior. First, allow or insist that the child continue performing the undesired behavior until he tires of it (the Satiation Principle). Second, make sure the child receives *no* rewards following the undesired behavior (the Extinction Principle). Third, reward an alternative behavior which is inconsistent with or cannot be performed at the same time as the undesired act (the Incompatible Alternative Principle). Fourth, make the child terminate an inappropriate behavior by substituting a behavior mildly unpleasant to him (the Negative Reinforcement Principle).

The Satiation Principle is most effective if the undesirable behavior is not all that serious or important, e.g., slamming the cabinet door, belching, throwing spitballs. If it is possible to arrange conditions so that the child receives absolutely no rewards for bad behavior, the Extinction Principle may be considered. However, if the concern is to assist the child to learn a more acceptable behavior, it is far more effective and useful to employ the Incompatible Alternative Principle.

If the other three principles have failed, it may be necessary to employ the Negative Reinforcement Principle. A word of caution, however, is necessary: these principles are not suggested as panaceas to be utilized indiscriminately, inconsistently, or in combination. Their use by parents or teachers should be carefully and thoroughly evaluated to determine their effectiveness and whether they should be modified or another principle employed.

It is also important that I comment on the difficulty of employing the Extinction Principle with certain children, including those with little or no vision. Utilizing the principle means controlling *all* sources of rewards, external and internal. Behaviors that are reinforced by internal rewards (physiological sensations) simply are not extinguished as a result of ignoring the behavior.

The same word of caution, moreover, applies to presenting a child with a mild aversive situation (Negative Reinforcement Principle). Being sent to one's bedroom or to an empty room in school, for example, may result in the child's turning inward for satisfaction (internal reward). Consequently, it is my opinion that it is more appropriate to consider utilizing the Incompatible Alternative Principle.

ATTRIBUTES vs. DEFICITS 15. "Isn't it important to emphasize the positive attributes of a visually handicapped child?" Of course, provided your comments are accurate, meaningful, and appropriate to the questions and needs of those parents and teachers with whom you are working. If, on the other hand, you are uncertain, uncomfortable, and fear not being accepted or respected, your remarks will be perceived accurately as incomplete and avoiding by nature. Moreover, your emphasis on only the positive attributes to the exclusion of readily apparent deficits may serve to support those parents or teachers who themselves need to deny a child's limitations.

In addition, resist the temptation to compensate for your feelings of inadequacy by making with assurance global statements regarding causation and predictions of future behaviors, academic results, or long-range vocational possibilities. Keep in mind that you are but one member of a team comprised of caring individuals—parents, teachers, medical people, and personnel of agencies serving the visually handicapped. Actively seek their support and assistance. Together, we can assess and meet the needs of the visually handicapped child.

Guided Vocational Choice

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Abstract: *Many visually handicapped people never have the opportunity to make an effective vocational choice either because their handicap is, or is thought to be, too limiting, or because they simply cannot picture themselves performing in different types of jobs. Informed vocational choice is not possible unless the individual and those who counsel him are aware of job alternatives as well as the individual's interests, abilities, and those personal qualities that affect job success. The information needed to make a guided vocational choice can be accumulated through an extensive history, vocational and psychological testing, and extended testing with work samples and situational assessment.*

▪ Some people seem never to try to make a thoughtful and planned vocational choice; they take whatever job is available without thinking about whether that job will lead to advancement or will provide opportunities for self-fulfillment. Too often the price of this lack of planning is drifting from job to job without either personal satisfaction or significant financial reward.

Among handicapped people, many never have the opportunity to make an effective vocational choice because their handicaps are, or are thought by others to be, so limiting that alternatives are not available to them. If there is some job in which they can demonstrate enough ability to be acceptable to an employer, they find themselves locked into that job indefinitely. The frustration of this situation has been expressed many times by blind workers interviewed in various resarch studies (Bauman & Yoder, 1962; Bauman & Yoder, 1967; Scholl, Bauman, & Crissey, 1969). Hoyt (1974) reports that C. Samuel Barone, Bureau of Education for the Handicapped, U.S. Office of Education, has predicted that of 2.5 million handicapped youth who will leave our schools in the next four years, one million will be underemployed and at the poverty level.

The challenge of combatting such waste of human resources belongs in part to families and to the individuals themselves, but, most of all, it is a challenge to education and rehabilitation.

Informed vocational choice is impossible unless the individual and those who counsel him have information about jobs and about the individual's abilities, interests, and those personal and personality qualities which so much affect job success and job happiness.

CAREER EDUCATION It is not the purpose of this paper to discuss the growing specialty of career education, but we wish to recognize its importance and urge the reader to check information from other resources (Best, 1974; Hoyt, 1974; Klinkhamer, 1973; Weishan, 1973; Wolfe, 1973). Career education for the visually handicapped has been the focus for two meetings of a task force of the American Foundation for the Blind (March 1972 and January 1974) and was the subject of an AFB-sponsored national conference in January 1973.

For many years before the development of this larger concept of career education, there were numerous sources of vocational information which varied from highly sophisticated commercial publications and films, through the efforts of many professional associations to acquaint students with their special fields, to the informal efforts of countless teachers and counselors. Much of this material could be used by visually handicapped youth, but it lacked the special information they needed to picture themselves doing these jobs without vision.

A few early publications (ACM Committee on Professional Activities of the Blind, 1966; Hyde, 1954; McCauley, 1961; Sterling & Bauman, 1965; Thomason & Barrett, 1961) described certain professions in relation to blind workers. A series of RSA mailing pieces concentrated on rural and industrial jobs (1960, 1962). Bauman and Yoder more recently provided manuals on placement of blind people in professional, sales, and managerial (1962) and clerical, industrial, and service (1967) occupations.

Information about the individual comes chiefly from three sources: 1) a cumulative history which may exist in records, in the memory of his parents and others close to him, and in his own memory; 2) vocational and, to some extent, general psychological testing; and 3) extended evaluation through work samples, situational assessment, and work history.

The kinds of history which should be considered may not greatly differ whether the client is sighted or blind, but the emphasis, the implications, and the depth of probing might be quite different.

How deeply the medical aspect of the individual's history should be probed depends somewhat upon evidence of normal current functioning. If there is no reason to suspect pathology, the history may be simply checked for serious illnesses or accidents and their implications for the future. In all cases, questions should be carefully phrased to disclose *all* health problems since there is a great tendency for some clients to gloss over chronic conditions which are under control.

Complexity of Handicaps

Where the record from either history or testing is atypical, there may be value in seeking more detail about prenatal (Did the mother have rubella or other damaging illness?), natal (Was the birth premature or was there birth injury?), and early developmental history (Any nutrition problems, slowness in development, etc.?). A large number of blind persons are multiply handicapped and for many the "secondary" condition is far more difficult to overcome than is the blindness. A full understanding of the complex handicap is essential to a well-planned vocational program. The counselor of blind children and adults should be knowledgeable concerning the implications of, and treatment for, many other handicapping conditions.

The ophthalmological history should at least contain information of vocational relevance, including age of visual loss, recency of visual loss, cause of blindness, present visual acuity, prognosis, and possibility of visual improvement.

LACK OF CONCEPTS The person who has been without useful vision from birth lacks some concepts which cannot be mediated through other sense modalities. The lack is often masked by verbalization which fits nicely with the communication of sighted people, but occasionally the lack of the concept can be troublesome. Certainly use of the concept in a job requires special coping mechanisms.

Conversely, adventitiously blind people are often helped by the memory of experience with space, form, and other concepts. These memories may ease mobility, orientation in a work space, manipulation of objects, and the understanding of instructions about a job.

For those who formerly had normal vision, adjustment to blindness requires time—different amounts of time for different people, but always some time. If the visual loss occurred rather recently, employment or even training for employment may have to be delayed until the individual has mastered skills of daily living, mobility, and communication. In addition, for many people there is a period of marked emotional upheaval as the individual mourns his loss of vision and works toward acceptance of a new concept of himself as a blind person.

The cause of blindness may tell much of the individual's past and predict much of his future. Is blindness the result of diabetic retinopathy, a self-inflicted gunshot wound, a war injury, or a hereditary condition shared by many others in the family? This is but a small sample of the widely varied histories implied by this small section of the ophthalmological data. The counselor must know how to use this information and how to probe the implications as a practical aid in understanding his client.

USE OF REMAINING VISION Far more than half of those who are legally blind retain enough vision to be of some help under some circumstances. In a familiar setting a very small amount of vision may significantly improve efficiency or may free the worker from dependence upon others. The counselor must not only know the ophthalmologist's rating of the amount of vision, but also the efficiency with which the client can use that small retained vision, the best lighting for its effective use, and whether it is constant or variable.

The counselor should also recognize the stresses which may go with that retained vision. Often there is a constant fear that the vision will diminish, frequent misunderstanding of the partially sighted person by those around him, and a frequent tendency of the client to say that he can see more than he really can, which in turn keeps him trying to live up to expectations he cannot quite meet.

Fluctuating Vision

In varying degrees most partially sighted people live with a constant fear of further loss of vision and for some that further loss is almost certain, as in retinitis pigmentosa or diabetic retinopathy. When the eye condition is not static, it is most unwise to train for a job which would be impossible if further visual loss occurred. Understandably, many clients resist facing the implications of further visual loss, but the counselor must give this practical consideration.

The counselor should always consider the possibility that surgery, treatment, or use of low vision aids might result in significant improvement in vision. This possibility should never be overlooked even when it is known that the client had good eye care in the past. Where any useful vision remains, improvements in technology and changes in the client's condition might both make it worthwhile to re-evaluate the possibility of regaining enough vision to be of some vocational significance.

EDUCATIONAL HISTORY With the educational history the chief message is to beware. Question and evaluate almost every point in the educational history. Did the client start school at the normal age? Did he make a lot of changes of schools, and if so, why? Was he failing? Was he seeking a more favorable educational climate? Was he out of school for prolonged periods, perhaps for health reasons or because no appropriate school was available to him? In short, did he really have 12 full years of schooling and fully earn graduation from high school? Did he attend residential or day schools, or move back and forth between them? Did he have good communication skills when in school, such as braille, large type, and a good note-taking system? Were books provided in braille, in large type, or on tape and were these books usually provided early in the school year so that no time was lost? Did he have readers, and if so, did he use them effectively? Was the full range of educational opportunity available to him?

If he attended a residential school, were all needed courses available, both well-staffed and well-equipped? Did he find educational opportunity narrowed by a limited range of subjects, sometimes poorly taught by teachers forced to cover fields for which they were ill-prepared? The small size of residential schools does tend to force some faculty to teach several subjects though well prepared in only one. At other times, the small school cannot provide well-equipped laboratories and shops so that too much of the teaching is verbal.

> **"Too often teachers give the blind child good grades because what he produces is 'good for a blind child,' but would barely pass for a sighted child."**

On the other hand, the residential school makes its entire offering available to every child whereas the visually handicapped child in public school is often excluded from classes which, in the opinion of the teacher, require vision. He may therefore attend a school which has well-equipped labs and shops but never be allowed to use them. Indeed, he may be excluded from athletics, music, and even from typing classes. So, if the client attended public school as a visually handicapped person, question whether all classes were open to him and how he managed such studies as physics, chemistry, and geometry.

"EARNING" ONE'S GRADES In either residential or day school, but particularly in the latter, did the client fully earn his grades? Too often teachers give the blind child good grades because what he produces is "good for a blind child," but would barely pass for a sighted child. So question just what graduating from high school really meant. To some extent, this question also applies to college where, again, less may be expected of the blind student.

These are only a few samples of the kinds of special probing which must be done when the client was educated as a blind person. A simple statement of graduation from high school or college cannot be accepted as a full educational history.

For the adventitiously blinded adult the preceding questions have little importance; education was probably completed as a sighted person. Here the question may be whether the special skills related to living with blindness have been mastered, especially braille or some substitute system of communication and record management.

FAMILY AND SOCIAL HISTORY In-depth consideration of the family and social aspect of the client's history may appear to have minor relevance to the making of vocational choices, but in many cases it must be considered.

For the young person, blind or sighted, the ambitions and attitudes of parents play a significant part in career planning. For blind youth, their importance may be greater because blindness does cause some parents to be more possessive, more protective, and more inclined to try to influence the young person. In other cases, more or less open rejection deprives the young person of the parental support and encouragement one would ordinarily expect. Both for youth and for the adult blinded later in life, a significant factor may be some family member who makes independence difficult to attain by insisting that the blind person cannot, or should not, be expected to travel independently, leave his home city for a job in another location, or generally do things for himself. Such family attitudes militate against independence which is the essence of rehabilitation.

Fortunately, there are also many families which give excellent and understanding support to the rehabilitation effort. It is important for the counselor to determine, rather early in planning, just what part family members may play, whether favorable or unfavorable.

EMPLOYMENT HISTORY If the client has had any employment since visual loss, that employment history should be considered carefully for evidence of interests, tasks which the client does easily, those which give him trouble, ability to get along with both peers and superiors, ability to work at an acceptable speed, and many job attitudes including promptness, freedom from absenteeism, etc. Most of these are the kind of information any counselor would consider in the history of any person with whom he worked, regardless of vision, but the emphasis may be different because some clients do feel that blindness excuses dependency, failure to meet production standards, and failure to follow rules.

On the positive side, the history may disclose areas where the client can easily succeed. Previous experience is an important selling point in trying to open job doors, whether that experience was gained before or since visual loss. However, it is also important in all career planning to think of experience as a foundation upon which to build rather than chaining the client to a certain kind and level of job just because he has worked successfully in that job in the past.

Any realistic vocational plan must include consideration of what the individual knows or is able to do at the beginning of the planning. Training has to start where the client is.

VOCATIONAL TESTS For the person who uses print, measurement of vocabulary, basic arithmetic, and sometimes spelling would be regarded as a standard part of any battery of tests for vocational planning. For clients who do not use print, this measurement of basic achievement is usually omitted, chiefly because it is so difficult to do. The vocabulary and arithmetic subtests of the Wechsler Adult Intelligence Scale (WAIS) do throw some light upon those skills, but the mental arithmetic of the WAIS is far from representative of all math and it must be admitted that this area of achievement testing is thin in most psychological reports on blind clients.

Achievement Tests

The American Printing House for the Blind produces a number of achievement measures in braille and large type and regularly updates them. A complete revision of the Stanford Achievement Tests has recently been done with great care given to norming and to embossing the test content so that a blind person is not at a disadvantage. These achievement measures include vocabulary, English usage, a wide variety of arithmetic skills, social studies, and science. Their use would give a picture of the academic standing of a person below the college level and could be used with adults whose career plans require some evaluation of broad academic attainment.

Among the disadvantages involved in doing such complete achievement testing is that it is very time-consuming and requires a comfortable use of braille or large print. Some approximation of achievement measurement may be obtained through oral administration.

Through the use of tapes or dictated material, typing skills may be evaluated. There is little real development of formal testing, with good norms, in other achievement areas. At least at a verbal level, some kinds of trade knowledge can be probed through interviewing. Complete skill measurement, however, tends to be better left to the rehabilitation center because the client cannot be expected to have the stamina and prolonged attention necessary to do complete achievement testing in a day or two. In a school or rehabilitation center it is customary to give, at most, two achievement tests in one day.

IQ TESTS Despite some difficulty in defining "intelligence," an evaluation is rarely regarded as complete without an I.Q. test. For blind clients, this is usually a verbal I.Q. and the Wechsler scales (WAIS for those over 16, Wechsler Intelligence Scale for Children or WISC for those under 16, or the Wechsler-Bellevue II which is still used under some circumstances). The great advantage of these tests is that they are administered to blind persons exactly as they are to the sighted, and no adjustment of norms is necessary. Because the various Wechsler scales have been studied in combination with a great variety of other tests for the sighted and have been used in countless research projects, they are probably better understood than most other tests by professionals and lay people as well. They have some defects, but experienced psychologists pretty much know those defects and their predictive value is not greatly reduced.

The Verbal I.Q.

In research with blind people, the Wechsler scales have behaved very well; almost invariably they have higher correlations than any other tests with whatever criterion of success is used (Bauman, 1954; Bauman & Yoder, 1966; Scholl, Bauman, & Crissey, 1969; Tiffin, 1960). It is therefore not surprising that counselors rely heavily upon verbal I.Q. in planning for their clients.

In many cases, the verbal I.Q. itself becomes a criterion against which other aspects of the client's achievement and behavior are measured. If the client did not get much out of school and dropped out early, we regard that behavior as quite normal if his I.Q. is 85; however, if his I.Q. is 120 we find such behavior very disappointing and immediately question what forces led him to be dissatisfied with school. In those cases where we can find no explanatory environmental factors, we may conclude that emotional disorders must be present. We do not question the I.Q.; we question everything else.

Yet we should keep in mind that the verbal I.Q. is definitely affected by opportunity for learning. Young blind children repeatedly remind us of this. Since it is the rare family which knows how to provide a truly enriching environment for the preschool blind child and many blind children spend their first years in extremely deprived settings, educators regularly expect marked increases in the I.Q.'s of blind children following provision of appropriate educational stimulation. If the I.Q. does not improve, we are likely to think the school has failed. In this case, the I.Q. is used as a measure of the school's success.

PERFORMANCE SCALES A few legally blind people may retain enough vision so that the Wechsler Performance Scales can also be used. When the Performance I.Q. proves to be much lower than the Verbal I.Q., one is never sure whether that client truly lacks the kinds of ability measured by the Performance I.Q. or whether he could not adequately see the test materials. Some psychologists advise against using the Wechsler performance materials with anyone described as blind because even if the client does rather well, we cannot know how much better he might have done with normal vision. Certainly interpretation of a Wechsler Performance I.Q. for legally blind clients must be done with great care. It is especially important (but not always easy) to differentiate between mediocre scores which result from slowness of thinking and mediocre scores which result from slowness of the visual functions.

There have been a number of efforts to develop performance measures for blind children and adults. Some of these have rather incomplete norms, others measure very limited segments of performance ability, while still others were distributed in small quantity and are no longer available. Only three currently see much use.

Haptic Intelligence Scale

Of these three, the most sophisticated is the Haptic Intelligence Scale for the Adult Blind (Shurrager & Shurrager, 1964). The HIS consists of six subtests of which four—Digit Symbol, Block Design, Object Assembly, and Object Completion—are three-dimensional adaptations of similarly named subtests of the WAIS. Two other subtests, Pattern Board and Bead Arithmetic, are special applications of a pegboard and an abacus.

The HIS was developed with great care over a period of ten years during which norms were established on 700 blind subjects varying in age from 16 to 64 years. Sampling roughly follows the pattern used by Wechsler in developing WAIS norms. It was assumed that the HIS would most often be used in conjunction with the WAIS Verbal Scale and therefore use of the Wechsler scales as a paradigm would simplify interpretation of the HIS.

Unfortunately, the HIS has been used less widely than its developers had hoped. Among the reasons for this are the length of time frequently required to administer it (often as much as two hours), the fact that norms are available only for persons without useful vision (who make up less than one-third of the clients of most agencies for the blind), the fact that norms do not go below age 16, and the cost and/or unavailability of the kit of testing materials. Also, if the client has had training with the abacus, the Bead Arithmetic subtest is invalidated and must be dropped from the battery. Despite all these negatives, the contribution which can be made by the HIS is worth the effort if the client is available over a long enough period of time, is over 16, and without useful vision.

Other Performance Tests

A more flexible test is the Stanford Kohs Block Design Test (Suinn & Dauterman, 1966) which provides norms for several levels of visual acuity and requires, on the average, much less time for administration. Most clients are challenged and highly motivated by the Kohs, and it provides very useful opportunities for observation by the clinician. On the negative side, the Kohs depends entirely upon the subject's ability to distinguish and copy patterns; i.e., it depends upon one kind of mental operation, albeit a very complex one.

Least sophisticated of the familiar performance tests is the Non-language Learning Test (Bauman, 1947). Prodded by the urgent need for some performance measure, Bauman adapted this moderately complex formboard into a learning task long before the HIS and Stanford Kohs tests were even in the planning stages. It has the advantages of rather brief administration time (often only a few minutes), excellent opportunities for observation by the clinician, and applicability over a wide age range, roughly age ten through adult.

> **"Psychologists tend to develop a preference for certain instruments and the psychologist himself is often unsure and uncomfortable when he tries to use an unfamiliar instrument."**

By varying some details of administration, the task can be made more difficult and can therefore challenge clients of widely varying ability and visual acuity. However, Bauman describes it as a clinical instrument, not a test in the most formal sense of the word. Its major value lies in the observations made by the clinician, not in the time scores.

DEXTERITY TESTS For the client without useful vision there are few measures of special aptitudes except the tests of dexterity. Because blind people must accomplish so many things with their hands, dexterity tests are often included in the test batteries of people obviously not likely to work with their hands in a factory or trade. Dexterity tests permit the observation of orientation in the work space, ability to follow directions, coordination, and speed of movement. Although more than 15 years old, the norms developed by Bauman (1958) for the Minnesota Rate of Manipulation, the Penn Bi-Manual Worksample, and the Small Parts Dexterity Test are still valid.

In work with both sighted and blind individuals, the easiest predictions are those based upon measurement of what the person can do at this moment, or what he has the potential to learn in either verbal or non-verbal areas. The most difficult predictions are those based upon interest and personality. This is true in part because test instruments for measurement of interest and personality are inherently less accurate, but it is true even more because these are among the most changeable of personal qualities.

Interest questionnaires can be read to the blind person and his response recorded by the reader, so any of these can be used with a visually handicapped person. Some of them are heavily weighted with activities which imply use of vision, a fact which narrows the choices for clients who cannot imagine how they would react to these items if they could see. Among the interest inventories which are frequently used effectively with blind clients are the Strong Vocational Interest Blank, the Kuder Preference Record, and the California Occupational Interest Inventory (Bauman, 1968). Using items from job descriptions of blind persons, Bauman (1973) has developed an interest inventory which consists entirely of activities which are possible for blind persons, thus eliminating the requirement that they try to imagine how they would feel about tasks which they could not perform. All interest inventories are weakened by the fact that many clients have little real understanding of job content, tend to make glamour and status-oriented choices, or find it difficult to imagine themselves working at all.

Even more difficult is the evaluation of personality. Psychologists tend to develop a preference for certain instruments and the psychologist himself is often unsure and uncomfortable when he tries to use an unfamiliar instrument. This discomfort is compounded if he is also unfamiliar with blindness. If the psychologist can effectively apply to problems of blindness a personality instrument with which he is professionally confident, that is probably what he should do even though that instrument has no history of use with blind persons.

Two full scales and several measures of single traits (Hardy, 1968; Jervis, 1960) have been developed especially for use with blind and visually handicapped persons. The full scales, by Bauman (1958, 1963), recognize some of the special problems of blindness and norms are based upon the responses of blind people.

Verbal projectives can usually be used with blind persons without any change in administration. Psychologists who are most comfortable with visual projectives such as the Thematic Apperception Test will probably not find it very difficult to switch to one of the several sound projectives. Of these, The Sound Test (Palacios, 1964) probably provides the best standardization. In the use of all of these projectives, one is somewhat limited by the willingness and ability of the client to verbalize.

"SIDE EFFECTS" OF BLINDNESS No matter what instrument is used, the important factor in interpretation is the psychologist's understanding of the "side effects" of blindness. These are many and complex but the broad outlines of special consideration have been noted in our previous discussion of interpretation of the history. Typical responses on the client's part may arise from quite atypical experiences; atypical responses may seem very natural when probing discloses the background upon which they are based. Again, the most careful analysis is required; take nothing at its surface value.

At the risk of being repetitious, it seems important to urge the greatest caution in the interpretation of all elements of the history and of all test results. The test instruments used with blind people are often of very poor quality, at least for this particular application.

Tests originally devised for sighted populations too often have one or more of the following disadvantages: (a) If administered orally, they place the blind person at a disadvantage, as when he is expected to hold accurately in mind four to five multiple choice responses while choosing among them. (b) They omit or awkwardly handle illustrations, diagrams, maps, etc. This especially applies to achievement tests in mathematics, social studies, and science where graphic material is frequent. (c) They contain items in which visualization is a key factor. (d) They require knowledge which most people obtain visually and which it would be unlikely anyone thought of telling the blind child. (e) They relate to events which are significantly modified by the fact of blindness, especially certain activities which cannot be done independently without vision.

Tests developed especially for the blind too often have one or more of the following disadvantages: (a) Content is of poor quality because the test was developed as a part of a master's thesis or doctoral dissertation and never received the careful study and reworking of a professional. (b) Norms are based on small numbers. (c) Norms are biased by use of institutionalized populations. (d) Norms do not appropriately represent both the totally blind and those with some useful vision. (e) Test instructions are poorly standardized or amateurish. (f) There is too little supporting literature for the test to make its interpretation accurate. (g) The test requires so much administration time that it can be used only in settings where the client is available to the psychologist for at least several days.

Interpretation of Tests

For both types of tests, interpretation is made more difficult by the tendency of blind clients to have very atypical histories. These histories can easily be overlooked if a great deal of time and professional effort are not given to the interview. For a more complete discussion of the above points, the reader is referred to Bauman's several chapters on this subject (1973, 1974).

When testing is done as a partial guide to vocational choice, the decisions are usually improved by actual work experience. This is particularly true for visually handicapped youth because they cannot learn about job content by casual observation as they pass people at work. They can be given verbal descriptions of job content, but words are far less informative than direct observation or, better still, real experience with the job.

WORK EXPERIENCE BEST

For these reasons, schools and counselors often encourage students to seek "hands on" experience through part-time employment, summer or other short-term jobs, and work-study programs. The ideal is finding such part-time employment in fields in which the student has shown some career interest, but that is not always easy to achieve. Less ideal, but still helpful, is almost any work experience; here it is hoped that the student will at least learn what it means to meet competitive standards, follow instructions, function in a job time-frame, and relate to fellow workers.

There is also much value, at least for some students, in a full-time job for perhaps a year between high school and advanced education. Unless the student himself proposes such employment, most counselors hesitate to interrupt the flow from high school to college; yet advanced education would often be more meaningful and far more successful if the individual were both more mature and more sure of his own direction.

For the person whose goal is obviously not college and the professions, some form of sheltered employment may provide an interim step. In many areas there are workshops, either for the blind or for handicapped persons in general, where the individual may sample a variety of simple jobs either casually or in more formal situational assessment. By this we mean that some workshops provide planned opportunities to try out one job after another, determining how long the client requires to meet standards of speed and accuracy and, of course, providing the client with opportunities to learn what he likes best.

WORK SAMPLES

Currently, there is increased emphasis upon the use of work samples, a trend highlighted by a February 1975 conference on the use of work samples with blind clients (Bauman, 1975). Three basic types of work samples can be identified: actual work samples, simulated work samples, and isolated-trait work samples. Actual work samples are taken directly from business or industry and reproduce the processes conducted there. Simulated work samples are developed by evaluators to simulate jobs; usually the work activity is duplicated but the materials, machinery, or work setting are modified. Isolated-trait work samples seek to measure one or more specific abilities which contribute to success on a variety of more complex jobs. The differences among these three basic types are matters of emphasis; all disclose specific abilities either by observation or by measurement and, in every case, the results of a series of individual work samples are combined to form a profile of client potential.

Among the advantages claimed for work samples are the following: They are especially useful in the evaluation of multiply handicapped blind persons or those with language, educational, or cultural handicaps. For many clients they provide built-in motivation and reduce test-taking anxiety. They evaluate some factors which paper-and-pencil tests reach only with difficulty and/or inaccurately, such as ability to follow directions, tool usage, work methods, initiative, work attitudes, etc. They may provide therapy for the client who does well with them, building his self-confidence and feeling of self-esteem. They may provide certain opportunities for learning, usually for the client of limited experience in the world of work.

Among the disadvantages listed for work samples are: Although opportunities for global and qualitative evaluation are often listed as advantages of work sample use, these are likely to be highly subjective and potentially inaccurate. Resemblance of work tasks to actual jobs is not necessarily assurance that performance on one will predict performance on the other. "Unwarranted confidence in work samples can be as harmful as unwarranted confidence in tests" (Sakata and Sinick, 1965). The lack of standardization of most work samples may result in very dssimilar results when they are used by different evaluators. Inconsistent administration and scoring reduce reliability. Work samples may not distinguish between aptitude and achievement. There is a great responsibility to interpret results in the light of how much related experience the client has had. Most work sample batteries do not provide for systematic assessment of the learning ability of clients, but this could be overcome by changes in procedure. Work samples tend to relate only to very simple, low-level, and/or entry jobs. A vast spectrum of potential employment is not served by them.

Literature on Work Samples

Overs' paper, "The Theory of Job Sample Tasks" (1968), is an excellent overview of this field. He discusses the problems in developing norms for work samples, the possible use of time-study methods to set standards, the use of percentile ranks and standard scores, reliability, validity, and the values of quantitative versus clinical appraisal.

McHugh (1973) describes work sample development and validity, and gives short descriptions of the three better known "packaged" systems, TOWER, JEVS, and Singer-Graflex. However, the most challenging portion of this paper is McHugh's exploration of new ways in which work samples might be used.

The professional literature reports only one work-sample series developed especially for use with blind clients, that of Lavere E. Clawson (1968). In a project begun in cooperation with the Murray B. Allen Center for the Blind in Salt Lake City, Utah, many industries were visited to find jobs which could be performed without vision. Five work samples were designed to require skills which vary from gross hand movements to fine finger dexterity and sensitivity. Each test requires from 20 to 60 minutes administration time and all have considerable face validity; two are actual jobs in industry, three simulate existing jobs. Reliability and validity were studied and, although the numbers in the normative group are moderate, the results are promising.

THE STATE OF THE ART

What, then, is the "state of the art" with regard to guidance for vocational choice for blind people? The answer to that question will be very favorable if comparison is made with what was available 35 years ago—nothing. The answer will be very unfavorable if what is now available is measured by such standards as accuracy of measurement, high predictive value, ease of interpretation by even a novice counselor, excellence of norms, or quantity and quality of follow-up studies.

Interpretation is made still more difficult by the multitude of complex ways in which the blind person's life experience tends to differ from the norm against which most counselors are accustomed to interpreting data. Yet in the hands of an experienced clinician who is willing to become informed about the problems of interpretation associated with blindness, vocational choice can be far better than chance and practitioners serving the sighted cannot say much more than that.

Better measurement instruments and methods are greatly needed, follow-up studies which would sharpen the value of the present instruments are much needed and, perhaps most of all, there is a great need for some professional setting in which specialists in this unusual field can be fully trained and provided with well-supervised internships. Of course, it is desirable to improve the tests, but it would be far easier, quicker, and probably more effective to improve those who administer and interpret the tests.

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The Assessment of Older Visually Impaired Adults by a Psychologist

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Abstract: *A psychologist's role in a specific rehabilitation facility for older visually impaired people is described. The uses of the assessment process for this population and the participation in the process by the student (client, patient), his family, other staff members, as well as the psychologist, are detailed. Specific tests that have been used with this population effectively are mentioned.*

▪ In writing this paper I have attempted to be as explicit and detailed as I felt appropriate for the first treatment of this subject matter. I do not believe that there are other papers treating the assessment of older visually impaired adults by a psychologist.

In writing as I have I hope to encourage other psychologists to become involved, which, I feel, is facilitated by allowing others to develop their own techniques using the tools they are comfortable and familiar with.

Greater specificity on my part could have created a set for functioning in an area which is so new. No one is so experienced in this area of assessment that they dare say, "This is *the* way to do it." I invite inquiry from anyone who would want me to be more specific on any point I raise. Mutual sharing of problems and experiences will be to everyone's advantage, especially the consumers.

While this paper treats the assessment of older visually impaired people, it would appear appropriate to employ similar techniques in trying to assist younger people who, while interested in achieving greater independence through rehabilitation services, are not interested in formulating educational or vocational objectives.

TESTING AND SERVICES Psychological testing has become an important element in the formulation of appropriate rehabilitation services for blind and seriously visually impaired people who wish to continue in, return to, or enter the labor market. The testing of children for diagnostic purposes has aided educators in offering programs that would recongize and develop students' potentials while remediating some of their limitations. Throughout the country many efforts are being mobilized to deliver rehabilitation services to older visually impaired adults at a level of intensity and quality that has previously been available only to younger people. It is anticipated that in developing such services we shall borrow from the experiences and body of knowledge that we have already established in working with younger people and include psychological testing in the process.

In an almost natural process, we will begin to refine our techniques and develop new methodologies which are more appropriate in delivering *rehabilitation* services that are meaningful to older people who are blind. This has been part of the process at the New York Infirmary Center for Independent Living (CIL), a rehabilitation facility for blind and visually impaired individuals over the age of 55. Located in New York City, it serves the four-state region of Connecticut, New Jersey, New York, and Pennsylvania. In the CIL's utilization of the traditional rehabilitation model, psychological testing was included as part of the evaluation procedure. I expressed some initial skepticism about the purpose and need for such testing with older people who, for the most part, had no vocational objectives. I was wrong. The staff and I found that psychological testing was making an important contribution to the rehabilitation process. This service is important enough to be included in other facilities contemplating offering similar programs. It becomes meaningful for the student and staff when there is less emphasis placed upon the term "psychological evaluation" and more importance is given to the concept of the assessment of an older visually impaired person by a psychologist. This facilitates the understanding of how each person uniquely incorporates the losses associated with blindness and the aging process in making adjustments to his or her life situation.

All professionals, myself included, like to think their

"Investing time with the student during this assessment makes many of them express the belief that they think others see them as someone worthwhile. For some this begins the process of their feeling good about themselves."

contributions are important, if not essential. When the student (sometimes called patient or client at other facilities) demonstrates keen interest in testing as part of an assessment process, there is a reinforcement that tells me that I'm doing something right. The initial fears that most people have when being tested are no different for older people, who have the same stake in success as everyone else. An open discussion about why the person is being tested, the kinds of tests to be used and the use of the results, eases much of the anxiety. Students always feel reassured when at the outset they are told that the results will be shared with them. Surprisingly, many students have told me that they enjoyed being tested. I think what they really enjoy is being treated with respect.

Sharing with them my assessment of them is a clear statement that I expect *them* to use this information as part of their decision-making responsibility in the rehabilitation process. Investing time with the student during this assessment makes many of them express the belief that they think others see them as someone worthwhile. For some this begins the process of their feeling good about themselves. A further dividend of assessment is the rapport established between myself as the psychologist and the student. Many students have expressed the feeling that they understand themselves better through this process. Almost universally each student has felt that I understood him as a person. This belief in being understood can be readily transferred to and shared by the entire staff. Feeling that you are understood is important to everyone and is an essential ingredient in the rehabilitation process.

INVOLVING THE FAMILY Assessment of the student by a psychologist has meaning for the student's family as well. With the student's permission and participation, an interpretation of the assessment results is offered to family members who are invited to be present during staff meetings. Such involvement with the student reinforces to the family members that the staff finds this person not only someone who is worthwhile, but someone who has potential for greater independence.

Sharing of assessment results with the family helps dissipate many stereotypical attitudes which may have manifested themselves through overprotection, rejection, and abandonment. This new insight regarding their family member may re-define relationships so that they too may participate in the rehabilitation process and while learning a new and more positive role they become a supportive therapeutic catalyst facilitating the student's accelerated independent functioning. The family knowing that it can relate back to me or the staff at any time in the future allows them to feel more secure and accepting of the student's involvement in the rehabilitation process while knowing that after graduation new roles of responsibility will be established. Family guilt, anxiety, and insecurity are replaced by more positive attitudes regarding the future.

In attempting to establish the concept that the student is being assessed as a person by a psychologist rather than being given a "psychological evaluation," the entire staff has become more comfortable with my role as part of the team. We have come to understand that each of us is involved in this assessment and that using many disciplines contributes to the better understanding of a person. I have found discomfort and suspicion by fellow workers of psychologists most disconcerting. Unfortunately, the manner in which some psychologists test and report on the people they are evaluating only adds to these feelings.

Initially I experienced some difficulty in removing the cloak of professional jargon when offering reports to the staff. This process was very much eased when I was able to relate simply and directly to the student's losses in terms of what they had experienced due to the aging process and their visual problems. Focusing upon the rehabilitation potentials, the problems that might interfere with learning, the strengths and limitations of the student and how the rehabilitation program should be structured for that person, began to be seen as a helpful and useful contribution to the entire staff effort. Addressing the assessment results to the rehabilitation process became an invitation for other staff members to involve me in helping them resolve the learning and adjustment problems of some students. This sharing goes both ways, for the staff frequently offers me much information and insight regarding student behavior so that I can help make a more meaningful and realistic assessment of a person.

The meaning of this procedure, in which I am attempting to assess an older visually impaired person, has forced me into a position whereby I must become readily available to this consumer who is a partner in this process. My information and interpretation must be meaningful to him. While I must confess that such a direct sharing and interaction with the person I was assessing was difficult for me, in the beginning, this process and the people I was attempting to help actually have made me and my work more relevant. Intelligence quotients and percentile scores of different factors aren't nearly as important as helping people understand themselves, their potentials, and limitations.

Having a person disagree with my findings has forced me to consider additional points of view while helping me to re-interpret the results. To be able to encourage a person to be comfortable enough to disagree or agree with me without either of us getting too uptight, has been most important for both of us. I have the feeling, as well, that such an interchange of ideas contributes much to the older person's sense of self, confidence, and respect. This right to disagree and the responsibility of giving input while resuming initiative in decision-making processes is reinforced by the entire staff in their relationships with the person.

The assessment of an older visually impaired person by a psychologist is most meaningful if it is an integral part of a total rehabilitation process. This assessment should be part of the initial evaluation so that all results can be integrated and used as a basis for constructing a program designed to meet the students' needs. Very much the same point can be made for the formulation of a service program for anyone, regardless of age. In sharing this information with the prospective rehabilitant, that person is then able to participate more meaningfully in the creation of a program to meet his needs and interests. My feeling is that, given this information, visually impaired adults are mature and logical in their selections and in a real sense make my work and that of my fellow professionals not only easier but much more meaningful.

SUBJECT INVOLVEMENT

Prior to initiating assessment, the simple but vital procedure of sharing with the student why he will be involved in this process, offers many dividends. It is particularly important for the older visually impaired person who might feel at a greater disadvantage since he has been out of school for so long. Many older people have had fewer educational opportunities and are fearful that such an assessment might put them in a poor light. People have expressed the fear that poor "test" results might cause them to be rejected. But I have found that most older students applying for rehabilitation services easily understand the need for an assessment when a thorough explanation is given. In this explanation I include the types of tests that will be used and why. Stress is placed upon eliminating the "pass-fail" concept that most people have and replacing it with an understanding of how the results will help the staff and the person understand themselves and their needs more accurately. The student's cooperation is always solidified when I tell them that the results and a full explanation will be shared with him/her. Students are pleasantly surprised by this approach, usually after experiences with physicians and ophthalmologists who don't offer an explanation of the results. The student sees this as a demonstration of respect and thrives accordingly.

The tests that I have employed in assessing older visually impaired adults have in no way been altered from those used with a younger population. I feel that the instrument to be used should be chosen by each individual psychologist, so long as it offers that information and insight necessary to meet the needs of the student and the appropriate assistance to other members of the rehabilitation team. Once an explanation of assessment purposes is given, a brief history of visual problems, health, education, occupational experience, and family relationships serves both to add to and confirm referring information and further facilitate a working rapport. Responses to the question, "Why are you at the rehabilitation center?" have provided me with much vital information.

In assisting the rehabilitation staff to understand the learning level and potentials of the student, the verbal portion of the Wechsler Adult Intelligence Scale continues to be an effective and accurate tool. While the intellectual level gives some insight as to the student's potential capacity to learn, other equally important insights have been provided. The effects of anxiety or stress on each student's learning gives us some idea of how to structure classwork to deal with these factors. The student's preference and capacity for dealing with materials on an abstract or concrete level helps me and the instructors organize our materials in a manner appropriate for each student. The insight, logic, maturity, and creativity of the student is better understood. The effects of other physical disabilities that are part of the aging process, such as strokes, loss of hearing, etc., upon the student's capacity to learn are assessed so that new instructional materials can be presented in the way we hope will be most effective.

One of my own stereotypes which is undergoing drastic alteration is the belief I had concerning the deterioration of intellectual functioning that occurs with aging. It may well be a rather select population of older visually impaired people who have presented themselves thus far for rehabilitation at the Center for Independent Living, but there is enough hard evidence to indicate that, when given an opportunity, such individuals are eager and able to learn and employ new learning techniques. My assumption of intellectual deterioration was wrong.

TESTING MANUAL DEXTERITY

The administration of a test of manual dexterity has served many purposes. I have found the administration of the Purdue Pegboard Test invaluable in terms of the understanding it has provided of an older person interested in rehabilitation training. The *least* important information to be obtained is speed when compared to fully sighted industrial workers. While most students have performed below the first percentile, speed becomes of some significance when a person's third trial is compared to his first effort. I can get some estimate regarding the person's speed of learning. The effectiveness and accuracy with which they implement instructions has been relevant to all rehabilitation instructions offered later. I have found that a person's approach to exploring the work board and its materials, the ease of functioning, accuracy, and orientation all have importance for the mobility instruction to follow. The ease with which some people use tactile guides in combination with residual vision has important meaning as well as for the person who relies exclusively but ineffectively upon his residual vision.

During this assessment some people demonstrate that they have already taught themselves how to utilize their vision more effectively. By performing a manual dexterity test, students frequently develop their own insights about some of their own needs in the rehabilitation process. While I prefer using the Purdue Pegboard Test, psychologists should feel free to utilize any other instrument they feel would give them similar or perhaps more extensive assessment data.

The understanding of a person is most critical to the rehabilitation process. The attitude that too many professionals express and feel is that blindness is so devastating, traumatic, and immobilizing that there must be concomitant emotional disturbance. These same professionals imply that since vision cannot be restored, neither can normal functioning. If such attitudes were not erroneous and harmful enough, many professionals within the field of blindness have similar rejecting attitudes toward those visually impaired adults who happen to be older. For certain, blindness and the process of aging create a number of losses for every person.

The number and degree of these losses and how they are accommodated to is unique to each person. No two people experience the same blindness. No two people experience aging in the same way. How each person perceives himself, his blindness, and growing older is most important. All the information and assessment results available to me are most helpful. I have found most helpful the use of the Sentence Completions Test for Use with the Visually Handicapped. Other projective devices are available. In addition to the Sentence Completions Test, I have just begun to use Mary K. Bauman's Emotional Factors Inventory. I hope that as I gain greater experience with this test, I will have another tool for the assessment of people.

USING TEST RESULTS The usefulness of these or any other tests can be measured in terms of how they contribute to the understanding of a person. The information and insights they reveal must be of meaning to the person being assessed. Numbers, scores, percentiles, categories, and diagnoses in themselves are less important, I feel, than a functional interpretation of their meaning. The entire staff should be able to utilize the information that I have available through my assessment. When *I* make it relevant, *all* staff members want to use it. The sharing of the information with the person I am assessing must have meaning for him so that he can participate more actively in making decisions regarding the rehabilitation training that may follow. In essence I have become accountable to a consumer and I feel that we are both better off for it. Put simply, I hope to be able to use the results of my assessment as part of the rehabilitation process, to help rebuild a person, to help motivate him through his understanding of his potentials, to give him a greater measure of reality and confidence to participate in a program designed to offer him a greater measure of independence.

In recognizing the fact that rehabilitation services have concentrated on helping younger people in terms of their educational or vocational careers, we have been forced to acknowledge that such assistance has been denied to the vast majority of visually impaired people. This discrimination is based on age. The need and right for independence draws no such artificial line. Once older visually impaired people are given an opportunity to participate in a meaningful program, they demonstrate a vigor, energy, and enthusiasm universal to people with hope. There are new programs developing which will give reality to this hope. These programs may take shape in additional facilities, such as the Center for Independent Living, or be part of local community services in a hospital or neighborhood center. I would hope that psychologists will be given an opportunity to play a role. There is much to be learned and shared. I hope to do retesting shortly which might measure the effectiveness of some of our work at the CIL. I would like to participate with others in developing new assessment techniques regarding losses associated with the aging process. I would like to hear from others or read of their work with older visually impaired people. I would like to share more with others of all disciplines and receive help from them so that I as a psychologist can do a more effective job of assessing a person.

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The International Register of Research Published

▪ The *International Register of Research on Blindness and Visual Impairment*, a "current awareness" guide to the work of 735 researchers from around the world, is now available. Compiled by J. M. Gill of the Warwick Research Unit for the Blind, University of Warwick, England, with the assistance of Leslie L. Clark, director of the International Research Information Service of the American Foundation for the Blind, New York City, the *Register* covers research in the natural, behavioral, and technological sciences bearing on problems arising from sensory impairment, especially visual impairment.

The format of this computer-generated guide is scan-column index plus a dictionary of descriptors. The *Register* also includes the names and addresses of all of the researchers listed; a copy of the questionnaire used to elicit the information; the names and addresses of organizations around the world concerned with research for the visually impaired; names and addresses of periodicals that publish research about blindness; and a description of the main subject areas, serial publications and services of related abstract journals, information services, and data bases.

The purpose of the *Register* is to provide an easy-to-use way for researchers and practitioners in the blindness field to keep up to date on research currently in progress and recently completed and to provide them with the information needed to contact directly researchers whose work is of interest to them. To insure its usefulness for these purposes, the compilers hope to be able to issue new editions every two years or so. In future editions, they also plan to expand the number of researchers listed, upgrade the quality of the descriptions of research, and improve the indexing system and descriptors used in future editions.

Copies of the *International Register of Research on Blindness and Visual Impairment* are available from the Warwick Research Unit for the Blind, University of Warwick, Coventry, CV4, 7AL, England. The price is (UK) £5 per copy.

Measures of Psychological, Vocational, and Educational Functioning in the Blind and Visually Handicapped: Introductory Remarks

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Editor's Note: This article is based on the introductory chapters—"The Manual and How to Use it"—of the forthcoming volume *Measures of Psychological, Vocational, and Educational Functioning in the Blind and Visually Handicapped* being published by the American Foundation for the Blind. The bulk of this manual—"The Measures"— is comprised of detailed descriptions of all those measures of intellectual functioning, educational measures, preschool measures and measures of social functioning, vocationally oriented measures, objective personality measures, projective personality measures, and additional measures that have been or are currently used in the assessment of blind and visually handicapped children and adults.

■ Increasing numbers of psychologists, psychological examiners, and rehabilitation counselors are being asked to assess the abilities of persons who have visual impairments. Teachers refer to the school psychologist children with visual impairments who are mainstreamed into the regular school program and who, like some "normal" children, present puzzling problems that require the skill of the psychologist for diagnosis and recommendations for remediation. School counselors accustomed to administering vocational interest and aptitude measures to the regular school population meet for the first time a student with a visual impairment who is mainstreamed; such a student also needs help in identifying an appropriate vocational objective. Psychologists working in child guidance clinics or community mental health centers learn that their next client is a person with a visual impairment; that client needs help too with the everyday problems of living. Rehabilitation counselors find among their clients a person with a visual impairment.

Questions asked by each of these professionals include: "What measures should I use?" "Will the instruments I depend upon also work with this person who has a visual impairment?" "What modifications do I need to make for this person?" "Should I use regular norms for the tests?"

In the past, evaluation of the visually handicapped was largely the province of specialists. Some recent trends, however, have changed this. Mainstreaming handicapped children from special to regular education has resulted in pressure on school diagnosticians and school counselors to evaluate and assess handicapped as well as normal children. The movement toward including services to the visually impaired within general vocational rehabilitation and social service agency programs requires teachers, social workers, psychologists, psychiatrists, and rehabilitation counselors to have special knowledge of this group. Developments in consumer involvement, accountability, and child advocacy have increased the need for accurate assessment in order to provide clients, parents, and concerned workers with meaningful information. Reliance on a single assessment measure is no longer feasible and professionals must be able to select those appropriate to the specific needs of the client from a wide assortment.

USES OF THE MANUAL

This manual was developed to provide a resource for those seeking appropriate measures of psychological, vocational, and educational functioning in the blind and visually handicapped, and general information on how to go about using such measures with this particular population. Its development and publication grew out of numerous requests from helping professionals; psychologists, guidance personnel, rehabilitation workers, educators. Although well qualified in their own disciplines they are now asked to evaluate children and adults with visual impairments. Applying their expertise to this small incidence group, namely, those deprived of a major source of sensory input, possibly presents a greater challenge for evaluation than any other single handicapped group. Professionals can meet this challenge if they know appropriate resources and if they have guidelines for modifying and adapting their procedures.

The major purpose of this manual is to list available measures and instruments that have been or are being used in assessing children and adults with visual impairments. Such a listing would be incomplete, however, without some attention given to general guidelines for assessment and

"The most pressing question for the examiner is to determine what degree of test failure can be attributed to impaired visual functioning and what to an inability to perform the task."

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discussion of some alternative strategies in assessment. These are presented in the following pages.

IMPACT OF VISION LOSS It is not possible here to discuss extensively the dynamics of the visual impairment as it relates to the adjustment and functioning of the individual. Thus, only a brief summary will be presented. The reader should consult Cutsforth (1933), Lowenfeld (1971, 1973), and Rusalem (1972) for more details.

One question that arises is whether specific cognitive, affective, or attitudinal correlates of the visual impairment may be expected. In general, behavioral scientists (e.g., Cholden, 1958; Cowen et al., 1961; Lowenfeld, 1971; Raskin, 1962) agree that there are no specific psychological reactions to the visual impairment that are distinct from the mechanism of reaction to stress or disability in general.

There are a few specific correlates of the visual loss in other areas of functioning, however, that should be noted. For instance, the visual loss causes a restriction in the range and depth of certain cognitive experiences. Knowledge of the object world is gained through the sense of touch since hearing gives no information about an object unless sound is an integral part. Thus, objects that are too minute or too large for the sense of touch cannot be experienced. A second important correlate lies in the restricted mobility of the person as he moves about his environment. In familiar places, he has a cognitive map that enables him to travel freely; however, in unfamiliar places he must rely on a mobility aid, such as a sighted person, a cane, a dog guide, or an electronic aid in order to explore the unfamiliar safely.

Factors Affecting Degree of Impact

The degree of impact of these correlates is related to whether the individual was born with the visual impairment, that is, a congenital condition, or whether he acquired it at a later time, that is, an adventitious condition. Further, the age at which the loss is sustained is important. In general, the younger the person is, the greater the influence of the loss on development. Finally, the type of onset may also be relevant. For example, a sudden loss may cause a different reaction than a loss that is gradual. Knowledge of the age of onset, type of onset, etiology, and diagnosis may be helpful information for the examiner in preparing to meet the client for the first time.

Another variable of the visual impairment is very important for the examiner, however, and is often not appropriately described in the medical report: how the client uses residual vision. Relatively few persons with a visual impairment have no useful vision or are classified as totally blind; rather, most have enough residual vision to aid them, especially in working with the concrete objects found in some vocational and performance measures. However, ophthalmologists' reports frequently do not include measures of both near and distant vision, either of which may be important for a particular test. The examiner, therefore, may need to assess visual functioning informally. This may be accomplished by such observation procedures as noting the ability to see color or detail in pictures, distance from the eyes that objects or materials to be read are held, and size of type that can be read.

USE OF RESIDUAL VISION Visual ability, or use of residual vision, is dependent on such factors as experience with visual tasks, motivation to use residual vision, ability to see detail at close distances, and tolerance for lengthy visual tasks. Many individuals now use low vision aids which enable them to see more efficiently. The examiner should explore with the person whether he has such an aid and whether he prefers to use it under the conditions that are typical of what will be expected in the testing situation. Some experimentation with different intensities of lighting may be appropriate, as well as trying different angles for positioning the materials. In general, the person himself is often the best judge of what conditions are best for his particular degree of vision, but the examiner should check to make certain that the person is able to manage the visual task. This often means observation to determine whether the visual demands of some tasks are appropriate for the individual. For children who inform the examiner that they can read print, it is wise to ask the child to demonstrate this skill (Bauman, 1974). For any visually handicapped client it must also be remembered that fatigue may make lengthy testing sessions impossible. Multiple sessions are often necessary.

The most pressing question for the examiner is to determine what degree of test failure can be attributed to impaired visual functioning and what to an inability to perform the task. Unless the examiner can assess to what degree a particular test item or task is tapping a client's visual ability, failure may be incorrectly recorded as a basic task failure rather than a deficit in visual ability. This is complicated since visual disability is often seen as such an all-encompassing condition and it is tempting to attribute all findings to the presence of a visual impairment. This generalizing is especially true when the client's physical appearance, mannerisms, passivity, or lack of facial expression make him appear limited in ability or in affect. Careful observation and extended evaluations may help to lessen these dangers.

Deviating from Standard Test Procedures

The great heterogeneity among visually handicapped persons often requires workers to employ deviations from standard test procedures in individual cases. For the examiner who is relatively inexperienced with the visually handicapped, Bauman (1974) advises that at least some familiar instruments or adaptations of instruments be employed. The examiner may also want to use a combination of parts of different tests for the visually handicapped client. If the client with partial vision does not perform satisfactorily, the examiner's observation may tell him whether a poor test result is due to vision rather than to other processes.

The examiner must also be aware that the assessment situation may have special overtones for the client who is visually impaired. The testing may not be seen as routine, but rather as part of a crucial process in education or rehabilitation. The person may have serious questions about his own abilities, perhaps comparing himself to other visually handicapped people, to sighted people, or, in the case of the adventitiously blinded, to prior abilities. Particularly for recently blinded adults who may be facing the loss of employment, or the child who may be facing exclusion from the regular school program, testing is likely to produce an anxiety that is greater than that normally expected.

Guidelines for the First Meeting With the Client

Examiners who are about to meet their first client with a visual impairment are apt to be apprehensive and understandably so. Blindness or loss of any degree of visual functioning carries cultural overtones that may produce anxiety in the sighted person (Monbeck, 1973). The best advice for such examiners is to apply basic common sense and treat the person as a person, albeit one with a visual loss. If the examiner is not sure what to do, simply asking the client will often produce an answer. Talking loudly to the individual will not help the situation: he can hear, he simply cannot see so well. The person with a visual impairment has two major avenues of contact with the outside world: sound and touch. Knowing this, the examiner should talk in a normal tone to the person and may wish to initiate some type of physical contact, such as taking his arm or letting him take the examiner's arm; touching him on the shoulder; or in the case of a child, patting him on the head. Providing the person with auditory and tactile sensory stimuli bridges the communication gap.

CLIENT ORIENTATION Generally, introducing the visually handicapped client to the testing situation does not present a problem. For the client whose vision is very restricted, the examiner should offer an arm to the adult or take the hand of a child to lead the way to the examining room or office. The client can usually seat himself if his hand is placed on the back of the chair. Comments that offer the client some orientation, such as mentioning the location of the table or the position of a tape recorder, are also helpful. Some friendly conversation may provide time for the person to become oriented to the sounds both within and outside the room. The examiner may wish to describe the room, where the windows are located, what is visible outside the window, or show the person around the room by guiding him. All these activities help the person to learn the setting and to feel comfortable in it.

Prior to beginning the formal procedures, the examiner should think through what is facing the person with a visual impairment under these circumstances as compared with the person who has vision. The latter, during the "warm-up" interval, has had an opportunity to look at the materials on the table, the interesting boxes, and, in general, to be perhaps somewhat curious about what he is about to be asked to do. The person who cannot see has experienced none of this informal introduction. The examiner may wish to provide this orientation orally and tactilely.

Common sense should again prevail when the testing actually begins. Bauman (1974) suggests, as a "rough but workable" guide, to tell the blind person "all information about the tests and testing situation that a sighted individual would get visually." Bauman emphasizes that the client must understand what is expected of him. For those with no useful vision, this may mean careful tactual orientation to some performance tasks. If the client is not clear about the nature of the task demanded, there is the danger that the examiner may find himself evaluating the client's ability to discriminate novel stimuli and to function in "new" situations rather than the ability that the test is designed to measure. The general guide to working with blind persons applies here: when in doubt, ask the client; he often will be able to suggest to the examiner the best means of working.

ADMINISTERING MEASURES IN OTHER MEDIA The actual administration of measures may be carried out in one of several forms. Items may be read aloud by the examiner, the materials may be brailled or may already be available in braille for clients proficient in that medium, or they may be presented in recorded form on open-reel or cassette tapes. Almost any verbal measure, such as academic achievement (see Nolan, 1962) or interest inventory, may be simply read to the client. Many measures, including performance items and vocational aptitude tests, may be used without modification with clients who make good use of residual vision and may even be adaptable for those who are classified as "blind" if sufficient time is allowed for orientation to the materials.

In using brailled or tactile materials, the examiner must remember that braille is a difficult medium and that many visually handicapped persons do not use it efficiently. However, for the client who prefers braille, measures published in this form are indicated in this manual. In addition, braille answer sheets are available from the American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Kentucky 40206. Some tests are also available in a large-print format, although many persons may use a low vision aid more efficiently than large print. Again, the client is often the best resource for determining what medium should be used.

Interested readers are once again referred to the general references within this volume or to the resources of the American Foundation for the Blind for further guidance or consultation in the area of assessment of the visually handicapped. For those with an interest in assessment in a particular area, a list of specialized references may be found at the beginning of the general references in this volume.

The Question of Standardization

When the formal testing is concluded, the examiner may face the next question, that of which norms and what scoring procedures should be followed. Modification in procedures followed is of course necessary given the wide variation among visually handicapped clients in degree and nature of visual functioning; age of onset of visual handicap; developmental, educational, and social history; presence of additional handicaps; and sociocultural differences. These necessary modifications in test format and administration do of course have an effect upon reliability and validity. In addition, for some tests norms may be specialized, that is, may refer to a handicapped subgroup of the general population, or they may be general.

In dealing with this question it must first be understood that not only have many of the measures used with visually handicapped clients not been standardized on this population, but that even many measures that do have some standardization with the visually handicapped present poor or unreplicated norms derived from a population that itself may be small, biased (e.g., only children in residential institutions), or very heterogeneous (e.g., varying degrees of vision, multiple impairments, etc.) (Bauman 1974; Malikan & Freedman, 1970; Rusalem, 1970). For the examiner, this means that more reliance must be placed on observation,

"... undue emphasis may have been placed on the visual impairment and its impact on the individual. That is, it is often tempting with the visually handicapped to attribute all their characteristics to impairment rather than to other possible factors."

interviews, case history, and clinical judgement than might be necessary with non-disabled clients. Situational observations, retesting, and careful attention to the quality and speed of response, all in the context of what is known of the client's background, also will help the examiner to gain confidence in the face of necessary common-sense deviations from norms.

STRATEGIES AND ALTERNATIVES

The central question faced by examiners as they move into the assessment of the visually handicapped is to determine the goal of that assessment. In general, goals will be determined by the nature of the referral, by the setting in which the individual is being evaluated, and by the resources available for subsequent programming. Goals might also include program evaluation, research, or program monitoring in addition to individual assessment. The examiner may wish to concentrate on the measurement of rate or degree of change over time instead of measuring level of performance with the goal being to determine the potential for growth or the ability to learn. In this way, measures may not only be used to evaluate client status, but may also be used as part of a larger procedure of continuous monitoring and feedback. Seen from this perspective, the question for assessment becomes one of deciding what strategy or approach will most effectively and economically gather the necessary data.

Traditionally, assessment has been carried out through the use of formal measures. However, many examiners have found it useful to consider alternatives to traditional assessment approaches. The following are illustrative of procedures other than the use of measures noted in this manual:

1. Observation in the home, school, or other familiar setting. This procedure may be particularly useful in assessing young children or multiply handicapped children or adults, and may provide a better indication of the range of actual and potential functioning than observation limited to the testing situation proper. With children, in particular, home and family observations are recommended by many workers, not only as a means of determining to what degree the child's functioning is a factor of situational variables, but also as a means of gauging the child's differential response to various adults across settings (see Elonen, 1970).

2. Observations as well as formal assessment in settings that are new for the client. This strategy may be useful in assessing such characteristics as how adaptable the person might be when moved to a different setting, the extent of his orientation and mobility skills, coping skills that become highlighted when new responses are required, and degree of adaptation to new persons in the new setting.

3. Trial experiences in placement settings being considered. This may be helpful, for example, in assessing a child's adjustment to other children, whether handicapped or not; an adolescent's adjustment in a vocational course; or an adult's ability to adapt to a particular work setting. Trial work placements and diagnostic classrooms are examples of this strategy.

4. Behaviorally oriented assessment. Rapidly developing behavioral techniques for identifying and charting rate and frequency behaviors are gaining great popularity in many settings as a useful assessment strategy that provides data that is easily translated into programming for the client.

5. Case material from the client, family, or caseworker. These may be useful in determining the extent or sources of problem areas, although caution must be exercised because undue emphasis may have been placed on the visual impairment and its impact on the individual. That is, it is often tempting with the visually handicapped to attribute all their characteristics to impairment rather than to other possible factors.

All of the foregoing should be considered in addition to, or perhaps in some instances instead of, formalized instruments such as those included in this manual. The examiner will also wish to take into account the possibility that multiple observers or multiple disciplines may be involved in diagnosis and decision-making for the client. The examiner must then decide what factors are the most relevant to assess, and to what degree, in the light of the decision to be made. Collection of data in excess of what can be used by the resources available may merely cloud the central issues.

Given multiple sources of data, it becomes the examiner's task to evaluate the client according to the degree of concurrence of a variety of sources of information. Under these conditions, the examiner must be especially attuned to the possible significance of seemingly incongruous data, especially in the low-functioning client, as well as the importance of such variables as social competence, communication skills, mobility and orientation skills, vocational and recreational interests, motivation, work tolerance, and other competencies that may be as important to the visually handicapped client's welfare as more purely intellectual or emotional factors.

It should also be noted that, consistent with the emphasis on accountability, recent decisions requiring that records be made available to clients make it especially necessary for assessment to be clear, accurate, effective, and based on multiple sources of information.

The Purpose of the Manual

The major purpose of this manual is to provide as complete a listing as possible of assessment measures that have been or are currently used by professionals in working with children and adults who have visual impairments. From such a listing, professionals, particularly those who have never before evaluated a visually handicapped child or adult, may select those which are most appropriate for a particular purpose and may also determine from the listing which instruments in their personal repertoires have been used with such persons. In addition, the manual may provide the researcher with information about experimental or little used measures that might be useful in his research efforts.

CRITERIA FOR INCLUSION

The major criterion used in the selection of the measures to be included in the manual was some published evidence of use with some segment of the visually handicapped population. In a few instances, no publications are listed for a particular measure because the professionals who are using the instruments and who communicated the information to the authors have not published their experiences. In these cases, the user's name and address is included.

From a review of the literature and from communication by personal contact, telephone, and letter to various professionals known to be working in this field, almost 200 measures were identified and are included in the manual. They fall roughly into three groupings: those that were developed and sometimes standardized specifically for the blind and/or severely visually impaired; those that were developed and standardized on a normal sighted population but that have been or are currently used with the visually impaired; and those that were developed for a specific research purpose. In this latter group, scanty information was available for many measures. It appeared that many were developed as specialized measures for a particular research project and probably have not been used since. They are included, however, because the guiding principle in the development of this manual was to err on the side of including too much rather than too little. Increased selectivity may be possible in future editions.

LIMITATIONS OF THE MANUAL

The major limitation of the manual is the absence of evaluative data concerning the various instruments. There was no attempt made to evaluate any measure according to the standards published by the American Psychological Association for educational and psychological tests (1974). At a later time, the measures that seem to be more promising should be evaluated against the APA standards to determine their value on a more objective basis.

It is possible, indeed likely, that there are inadvertent omissions both of additional and important references for instruments included here and of other useful measures. Information on some measures, particularly little known ones, could not be obtained within the limits of this project's resources. There are undoubtedly many individual examiners who have developed but not published their own measures or their own versions of measures and these have not come to the attention of the authors. Therefore, this volume should be regarded as a provisional work, the early publication of which is justified by the demand of workers in the field. Interested professionals are by all means encouraged to provide the authors with any information regarding additions or corrections that may be useful in later updatings of this volume. Special feedback sheets have been developed and are included at the back of the manual for reporting additional measures and information concerning measures already included in the manual. Subsequent editions of the manual will be more complete if these feedback sheets are used. We urge our readers to help us in this undertaking.

Use Caution in the Selection and Use of Tests

Finally, the publication of this manual should not be construed as an endorsement by either the authors or the publishers of the idea that formalized tests are the only appropriate means of evaluating visually handicapped persons. There are alternatives to the use of formal instruments and we urge caution in the selection of instruments as well as in their use; many measures included here are more appropriate as informal diagnostic tools than as formal measuring instruments when used with the handicapped. In addition, the visually handicapped population, especially in the younger age groups, includes a large proportion who have additional impairments. With this gorup in particular, caution is urged in applying formalized procedures; meaningful observation in a natural setting is frequently far more meaningful and productive than assessment in a sterile clinical setting.

ORGANIZATION OF THE MANUAL

After considerable discussion, the authors decided that the most logical organization for this pilot edition would be around the general purpose of the measures: intellectual functioning; educational achievement; social functioning, including preschool and vocational aptitude and interest; personality measures, both objective and projective; and miscellaneous measures.

Within each group, measures are listed alphabetically by title. A brief description of the purpose is included. There is wide variation in this section since scanty information was available for some, sometimes only a single journal article. It was not possible to followup peripherally mentioned references within the resources of this project. The available source for the instrument is included where such information was known. Readers are encouraged to correspond directly with the authors cited in the references for those measures which do not include a source. Finally, those book and journal references that could be located through as extensive a search as was possible are included.

The references include throughout the text titles related to the measures. In addition, we have provided a separate listing of general articles in the area of assessment of the visually impaired and a list of recommended readings. Unfortunately, many of the references may not be readily accessible in the typical library. We recommend the use of the libraries of nearby universities, particularly those that have rehabilitation counselor or teacher training programs in the area of the visually impaired, as well as the M. C. Migel Memorial Library of the American Foundation for the Blind.

USING THE MANUAL

This manual does not offer a prepackaged set of assessment tools to fit every visually handicapped client. For the professional who has never evaluated a visually handicapped person, we urge careful reading of the introductory material presented here and delving into the cited references. We suggest that references be studied regarding the use of measures that are familiar to the examiner. Beginning with an instrument that is known should help to make the initial experience of evaluating the visually handicapped client more comfortable from the examiner's point of view. Having thus begun with the familiar, we suggest moving on to those instruments which have been developed specifically for the visually impaired and those standardized on a normal population that have been used extensively with this group. Following this procedure will help extend the examiner's repertoire of measures that are specific to this group of the handicapped. Finally, the examiner, with the confidence thus acquired, may wish to experiment in using these favored measures following the guidelines presented above. Such creative professionals may be pleasantly surprised to learn that their client with a visual impairment is not so different after all.

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Further Sources of Information About Assessment

As mentioned in the introduction to this issue, there were many people apart from those represented in the special issues of the *New Outlook for the Blind* and *Education of the Visually Handicapped* who were interested in this project and shared the editors' concern about the paucity of information available on assessment of the visually impaired. Thus, during the past two years, several other projects were begun whose timing was coordinated so that what began as a special issue of one journal would be, in effect, a "mini-information system" on the subject of assessment of the blind and visually impaired.

These other projects are a compendium of testing instruments that can be used with the visually impaired, a series of workshops on assessment for educational readiness, and the formation of a nationwide network of school psychologists with experience in this area. All of these will be in print or operating by the end of 1975. Following are descriptions of these other sources of information on assessment.

Test Compendium

Measures of Psychological, Vocational, and Educational Functioning in the Blind and Visually Handicapped by Geraldine T. Scholl, Ph.D., and Ronald Schnur, M.A., is a compendium of more than 175 testing instruments that were specifically developed for the visually impaired, have been adapted for use with the visually impaired, or were developed for other populations but have been used with the visually impaired with some success. The introduction to this book is being published in advance as an article in this issue (see page 365).

Measures of Psychological, Vocational, and Educational Functioning in the Blind and Visually Handicapped will be published by the American Foundation for the Blind in December 1975. The price will be $5.00 per copy. Orders should be sent to the attention of the Publications Division.

ASSESSMENT WORKSHOPS TRAIN PSYCHOLOGISTS During the fall and winter of 1974-75, Susan Jay Spungin, Ed.D., specialist in education for the American Foundation for the Blind, held three workshops, in Newton, Massachusetts, Chicago, and Atlanta, on "Assessment for the Educational Readiness of the Child With Visual Impairments." Saul Freedman, Ph.D. (see page 361) was the leader for all three workshops. Three additional workshops will be held during the next few months.

The workshops had two primary purposes. The first was to train school psychologists (most of whom had neither experience with nor knowledge of the special needs and problems of the visually impaired) to provide effective assessment of school-age blind and visually impaired children, especially those in community schools. There is a critical need for this kind of expertise on the part of "regular" school psychologists, both because so many blind and visually impaired children now attend regular community schools and because such assessment is legislatively mandated in many states.

Nationwide Resource Specialists

The second purpose of these workshops was to lay the groundwork through training for the establishment of a nationwide network of school psychologists knowledgeable about the assessment of the school-age visually impaired child. The psychologists who are part of this network are available as resource persons to others in their area who need information about the assessment of the visually impaired. Rather than having to depend upon the few persons on the national level who have expertise in this area, school psychologists and regular classroom teachers will be able to consult easily with persons in their own geographical area.

This nation-wide network of psychologists trained to work with blind children will be coordinated by Susan Jay Spungin. Upon request, Dr. Spungin will provide persons wishing consultation or information in this area with the names, addresses, and telephone numbers of several psychologists within a specific state or geographic region. It is expected that there will be more than 100 school psychologists participating in this network by the middle of 1976.

For more information about this network, write Susan Jay Spungin, Ed.D., Specialist in Education, Program Development Division, American Foundation for the Blind, 15 West 16th Street, New York, N.Y. 10011.

Workshop Proceedings Available

Single copies of the proceedings of these workshops are now available free of charge from the Publications Division of the American Foundation for the Blind. These proceedings contain a description about how the training of the participating psychologists was organized, and extensive bibliography on assessment and evaluation of the visually impaired, a reprint of "A Manual of Norms for Tests Used in Counseling Blind Persons," prepared by Mary K. Bauman in 1968, and an extensive section devoted to case histories.

The case history section contains seven complete psychological reports on visually impaired individuals with a diversity of presenting problems, amounts and kinds of vision, goals, abilities, and intelligence levels. Those included were chosen to give the school psychologist with little or no experience assessing the visually impaired the widest possible exposure to the subject.

New Outlook Reprints

In addition, individual reprints of the articles contained in this issue of the *New Outlook for the Blind* will be available in December. The prices will be as follows: One copy: 15 cents; 10 copies: $1.40; 20 copies: $2.50; 50 copies: $5.00. Orders for these reprints should be sent to the *New Outlook*.

AFB Newsletter and Washington Report Included in the Recorded Edition of the New Outlook for the Blind

Beginning in September 1975, each issue of the recorded edition of the *New Outlook for the Blind* includes either the *AFB Newsletter* or the *Washington Report*. This added feature was made possible by the expansion of the recorded edition to two 8-1/3 rpm records and is made available as part of the regular subscription price of the *New Outlook*.

The *AFB Newsletter* is published quarterly and reports on the programs and activities of the American Foundation for the Blind. It is edited by Susan Islam and will appear in the February, May, October, and December issues of the recorded *New Outlook*.

The *Washington Report* is published every other month and covers those activities of Congress and federal agencies of concern to the field of work for the blind. It is edited by Irvin P. Schloss, director of AFB's Office of Governmental Relations, Washington, D.C. The *Report* will appear in the January, March, April, June, September, and November issues of the recorded *Outlook*.

The publication of these two newsletters in recorded form means that the *New Outlook*, the *AFB Newsletter*, and the *Washington Report* are now each available in print, in braille, and on disc recording. The print and braille editions of the two newsletters are available free on request from the Publications Division, American Foundation for the Blind. (The braille edition of the *Washington Report* is issued six times a year; four of the issues also include the *AFB Newsletter*.)

Subscriptions to the print, braille, and recorded editions of the *New Outlook* are available at $11.00 for one year, $18.00 for two years, and $27.00 for three years, and should be sent to the New Outlook for the Blind, 15 West 16th Street, New York, New York 10011.

Talking Calculator From TSI

A portable, talking calculator is presently under development at Telesensory Systems, Inc. (TSI). The calculator, which is expected to be available in early 1976, weighs less than a pound, runs on rechargeable batteries, and will be priced below $500. The calculator will be able to perform square roots, algebraic logic, and percentages, as well as the basic mathematical functions. It will "say" the number or function being activated when any key is depressed and a "speak" key will announce computational results. Further information is available from Telesensory Systems, Inc., 1889 Page Mill Road, Palo Alto, California 94304.

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The Center for Independent Living in New York is commencing development of such courses.

The Center for Independent Living is a program of the New York Infirmary, established to demonstrate that the elderly blind can maintain themselves independently in their own communities, free of costly institutions or nursing homes. In addition to providing in-house rehabilitation courses, the Center is breaking new ground in teaching methods, evaluative techniques, in-house and community support services, program monitoring—and the development of self-study courses including housekeeping skills, communications, and mobility.

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Guidelines for Contributors to the New Outlook

The *New Outlook for the Blind* is a magazine for professionals in service to blind and visually handicapped persons and provides an impartial forum for all views.

The selection of material for publication is made by the editors, after a review by individuals professionally qualified in the subject. This usually requires six to eight weeks. Material already in print or planned for publication elsewhere is not generally considered.

Articles

In general, articles for the *New Outlook* must:

—relate to or have implications for the field of work with blind and visually handicapped persons.

—be factually and statistically accurate, and make a contribution to knowledge and practice in this specialized field.

—be written in acceptable English that can be edited if necessary. (Authors may be asked to rewrite articles before acceptance. If major changes are made by the editors, the manuscript is returned to the author for approval before publication.)

—be 10 to 14 typewritten pages (approximately 2,500 to 3,500 words) in length. (Shorter articles, and longer ones if the subject warrants such treatment, will also be considered.)

"Letters to the Editor"

Letters (350 words or less) should be confined to correction of fact, information, or brief observation on any article or any new development in the field.

"Comment"

A "Comment" (350 to 1,000 words) may be a vehicle to express the author's point of view, to present new information or findings, to react reflectively to a problem or issue in this field, or to respond to material appearing in the *New Outlook*.

With contributions to both of these columns, the editors reserve the right to condense, edit for grammar, and decide on placement in either column. In view of space limitations and editorial considerations, not all contributions can be published. Editorial decisions, however, are made only after extended reviews have been conducted. Material which focuses on personalities rather than on issues or ideas is not given priority.

"Review"

Reviews of books, films, and other published material are written only on an assignment basis. Unsolicited reviews are never accepted.

Specific Instructions

All material to be considered for publication in the *New Outlook* should be sent to New Outlook for the Blind, 15 West 16th Street, New York, New York 10011.

A covering letter should state that the material is for publication (and whether it is has been published previously or is under consideration by other journals) and should include the address of the author to whom correspondence should be sent. In addition, the following information about the author(s) should be included for publication with the article: graduate degrees, professional certification, job title, employer, city, and state.

The original manuscript and one copy (carbon or xerographic) should be submitted. (The author should retain a third copy for his files.) All manuscripts must be typed on a standard typewriter, double-spaced throughout, with adequate margins, on 8½ x 11 inch paper (heavy duty, white, nonerasable bond).

Abstract

The author should prepare and submit with the manuscript a brief abstract. A set of guidelines for the preparation of the abstract is available upon request. This abstract will be published with the article and submitted to the Council of Abstracting Services which provides abstracts for the following journals: *Abstracts for Social Workers, dsh Abstracts, Language and Language Behavior Abstracts, Psychological Abstracts*, and *Sociological Abstracts*. (Articles in the journal are also indexed or abstracted in *Current Contents, Exceptional Child Education Abstracts, Excerpta Medica*, and *Rehabilitation Literature*.)

References

References in the text to the bibliography (which should be arranged alphabetically by author) should include the last name(s) of the authors(s) and the date of publication in parentheses, e.g., (Silverman, 1970), (Terry & Shaffner, 1972).

The style used in the bibliography should follow the forms outlined in the American Psychological Association's *Publication Manual*, section 8, pp. 39-47. (The *Manual* may be purchased for $1.50 from the APA, 1200 Seventeenth Street, N.W., Washington, D.C. 20036).

Basically, citations for articles in journals should include author, title of article, title of journal, year, volume number, and inclusive page numbers, in the following form:

Silverman, William A. Prematurity and retrolental fibroplasia. *New Outlook for the Blind*, 1970, **64**, 232–236.

When citing books, the information should include author, title, city, publisher, and year, in the following form:

Cholden, Louis S. *A psychiatrist works with blindness.* New York: American Foundation for the Blind, 1958.

For other bibliographic forms, see the APA *Publication Manual*. Footnotes, which should be used as sparingly as possible, should be numbered consecutively in the text and listed at the end of the manuscript.

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Photographs

Photographs should be labelled on the back with the following information: author, title of article, number of photograph as cited in the text (optional), and a descriptive caption if appropriate. If taken by a professional photographer, indicate the appropriate credit line.

Comment

A special forum for individuals to respond in detail to material published in the New Outlook for the Blind *or elsewhere, to present new ideas, or to raise issues which relate to the specialized field of work with blind and visually handicapped persons. Contributions should be 350–1000 words in length.*

A Lion Is a Woman

M. Robert Barnett

Helen Keller was the first—and for decades—the only woman to be elected to membership in the Association of Lions International. Strictly speaking, her membership in the all-male organization was honorary, but thousands of Lions during her life-time considered her to be an active member of the ranks because they had common aims and accomplishments.

If Helen Keller were alive (she died in June 1968) she would have been 95 years old on June 27 of this year. When she was 45—a half-century ago—there was a happening in her life of considerable moment, and a happening of tremendous significance in the history of the movement known as Lionism. The happening was a single speech. It was concerned with the problem of sight conversation and prevention of blindness, but equally with the personal, educational, and vocational lives of blind persons.

1925 Lions International Convention

The speech—hers, of course—was delivered at the Lions International convention in Ohio. It was 1925. It was at that point in the history of the young American Foundation for the Blind that Miss Keller had joined M. C. Migel's campaign for the expansion of programs for blind children and adults and for the funding so desperately needed for these programs.

It was not, however, her objective to persuade the Lions to contribute money. It was to persuade them to undertake actual service activities in the field of visual impairment as a major plank in the club's platform for community improvement and charitable assistance to those in need. She succeeded—although it is certain that her success was virtually assured in advance by the open minds and hearts of Lions men.

"Knights of the Blind"

It was in that appearance that Miss Keller appealed to the members of Lions to become her "Knights of the Blind." While the title is seldom if ever used, the Lions accepted not only the appeal but also the challenge. Fifty years later, the extent of Lions involvement in the field is not just remarkable—it is fantastic.

In July of this year, the organization's magazine *The Lion*, carried a comprehensive article on both past and current Lions activities in this field. It is a fascinating outline of such Lions activities as the establishment and maintenance of eye banks, the construction and equipping of opthalmic and optometric clinics, the construction of opthalmological departments in general hospitals, of programs galore to provide eye glasses and other optical aids, of the creation and/or support of private agencies serving blind persons—the sponsorship of the Leader Dog League and the Hadley School—of scholarship aid to blind students, and the list goes on from there.

The magazine referred to 1975 as an anniversary. It is the anniversary year of Helen Keller's speech. None of us who are professionals in this field are ignorant of the record, but we recommend that the article in *The Lion* be studied. We noted an omission—the kind of promotional strength that the Lions have shown in social action. The promotion of the standard of the white cane is one example, another is and was of vital importance to the blind citizens of one state—Florida.

Florida Legislature Speech

In 1941, when Miss Keller was 61, she appeared in another dramatic circumstance—a joint meeting of the Florida Senate and House of Representatives. The Lions of Florida had been convinced for some years that services to blind citizens would be better if administered through a separate state agency, responsible to the governor and the legislature, rather than through either the welfare or rehabilitation governmental channels.

Two years earlier, the effort had failed. The Lions sought the aid of the American Foundation for the Blind, and the Foundation lent Miss Keller to the campaign. The Lions promoted the joint session—Miss Keller spoke—and the legislation passed with a unanimous vote, a rare happening in Florida politics.

Florida Council for the Blind

The act created an agency called the Florida Council for the Blind, now known as the Bureau of Blind Services, Department of Health and Rehabilitative Services. Though consolidated to some extent, it still stands out as one of the most effective state programs in the country.

We salute the Lions for their response to Miss Keller's appeal during her lifetime, and for continuing service since her death. Perhaps a Lion cannot be a woman—but in this case a woman proved she could be a Lion.

Mr. Barnett, now retired and living in Florida, was formerly executive director of the American Foundation for the Blind.

Organizing the Search for Governing Board Talent

by Carl E. Woodward

When one considers that the governing board is fully responsible for everything that happens in the hospital, it is most important that the process for finding and electing the members be as foolproof as sound thinking and common sense can make it. Unhappily, that is not always the case.

Most boards (whether their members are called trustees, directors, or managers) are self-perpetuating in that members are responsible in one way or another for naming their successors. Modern practice usually dictates that members rotate; a specific number of trustees are replaced each year to provide regular turnover while a majority are retained to provide continuity of experience. In some hospitals, members can serve almost at will, without any time limit. This is probably not in the best interests of the hospital, as it tends to foster undesirable entrenchment, which inevitably leads to stagnation.

Redefining the Bylaws

Bylaws are usually vague in spelling out the process for selection of new trustees. Typically, they read something like this: "Annually, the president shall appoint three members of the board, who shall serve as a nominating committee. This committee shall offer its recommendations at the annual meeting for three members of the board of trustees, each of whom, when elected, shall serve for x years or until his successor is qualified."

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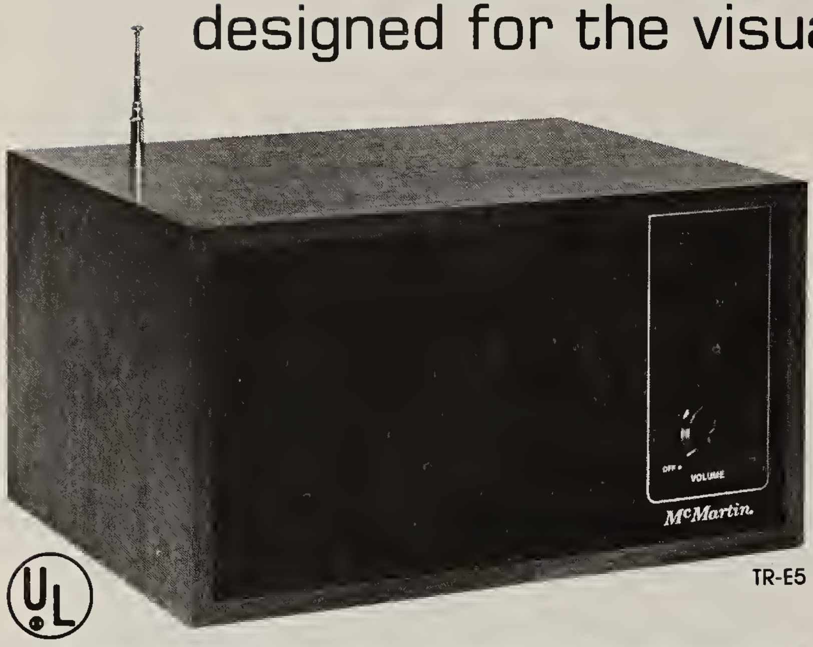

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Unfortunately, such language offers little specific guidance to those charged with carrying out this important responsibility. For instance, it would be well for the bylaws to specify that this committee be appointed several months in advance of the annual meeting and to require the chairman to report monthly progress to ensure that the nomination of candidates is completed on time. It is appropriate for the bylaws to provide for a balance of power in the board structure, if the board deems it to be desirable. There should be safeguards to provide for representation of physicians, women, or any other special group, such as the hospital auxiliary, that the board wishes to specify. If the desires of the board are not spelled out in the bylaws, it is possible they will be overlooked entirely.

Board Representation

Speaking of special-interest representation on hospital boards, except as broadly defined, I believe it is a poor practice to insist on it. To say that "there shall be at least one member of the medical profession on the board of trustees" is probably in order. Or to require specifically that "ex officio, the president of the hospital auxillary shall serve as a member of the board" should not be objectionable. But there is no sound justification for requiring representation from labor, ethnic, racial, or similarly defined groups. If the nominating committee does its homework conscientiously, it should make absolutely no difference what "group" a person represents, so long as that person's record indicates that he has the ability, experience, and dedication to make honest and sound decisions; that he is a team worker; and that he has the desire to do the job.

From the very outset, the nominating committee should have an ironclad rule that no person will be considered for nomination to any office until that person first understands the amount of time that will be involved and has offered reasonable assurance that he can provide that time. That is not to say that trustees may never miss a meeting. Such a rule simply prevents loading a board with deadwood. Nothing is more devastating to a chairman than to suddenly realize that an important agenda has been scuttled for lack of a quorum.

How is the search for talent organized? First, by recognizing that the responsibility is the nominating committee's. While it may be entirely in order for others—medical staff members, other trustees, or even administrative staff—to make suggestions, it should always be understood that the nominating committee need not be bound by them. Lists of suggested candidates should be compiled and carried over from year to year, with deletions and additions made as warranted. (This will save a lot of pick-and-shovel work for the nominating committee, whose members will change from time to time.)

Selecting Board Members

Who should be considered for board membership? Most employers today provide some type of hospitalization policy for their employees. For this reason, and because trustee decisions can easily affect hospital costs, it probably makes a lot of sense to have several business leaders on the board. That does not necessarily mean top management from the community's largest employers. These persons rarely can give the time required to do a good job for the hospital. If they can, that's fine, but if they can't, don't hesitate to spell out the type of person you're looking for and to ask the head of the firm to look over his staff and make a recommendation. Give him enough information so that he can make the best judgment. For example: "Mr. Jones, our hospital is looking for a person to serve on our governing board for three years. We need someone who is knowledgeable about capital financing since we expect to go through an expansion project during his term. The person we select will be expected to attend regular monthly meetings, and he also will serve on a special finance committee for the new project. Two or three meetings per month for the first year would be maximum. With this in mind, would you be willing to recommend a person from your organization whom we might approach?

Now, let's assume that Mr. Employer suggests his assistant comptroller for the job. The nominating committee then plans an intelligent presentation to inform the candidate of the persons he will be working with, the problems they are likely to face, and the time schedule and the scope of the contemplated expansion project. He should be given an honest estimate of the time he will be expected to invest. He might be shown around the hospital facilities and introduced to the administrator and others with whom he will be working. He should be shown why his services are needed and in what ways service on the board can be rewarding.

Whether the board is looking for a physician, a lawyer, or someone skilled in the technique of liaison with government, the same meticulous care should be used in making the approach. What the nominating committee is really doing is selling, and no salesman worth his salt would make an important call without adequate preparation. The candidate must be convinced that his time is needed. No position should be honorary unless it is so designated.

Finally, a word of caution in avoiding a common trap. Nominating committees shouldn't pick candidates for the governing board on the basis of their track records in some other endeavor or simply because they are good contributors to the annual giving campaign. A go-getting president of the Junior Chamber of Commerce or the recent chairman of the ways and means committee of the YWCA will not necessarily be a contributing member of a hospital board. To prevent an awkward situation where someone finds too late that he's in for more than he bargained for and, to everyone's dismay, does a poor job or resigns outright, it will pay to have a hard-nosed, honest get-together with the prospective board member before you ask for his decision.

Once the newcomers have been elected and are ready to join the board, give them a break—have an indoctrination session in which they are told as much as possible about their duties, the bylaws of the institution, and the do's and dont's of dealing with hospital staff. Follow up with a thorough tour of the institution, from boiler room to OR.

Modest attention to these principles will go a long way to ensure the best talent available for the boards that run our hospitals.

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Do You See What I See?

Joan Shumway

I don't exactly remember when I realized my father was blind. It certainly wasn't when I was very small and my dad would take my sisters and me for long walks on early Saturday mornings. We would walk almost reverently down the empty sidewalks in an effort not to disturb the "early bird." My father, who regulated his one long stride to match our several short ones, would tell us stories of his boyhood, interrupting every once in a while to softly interject, "Quick, look at that bird over there!" We would look, and sure enough, there would be a bird, pecking at a tree, chattering with its young, or playing tug-of-war with a seemingly endless worm.

Realization didn't come later either, when he took us to the weekly Saturday matinees. Dad would enjoy the movie as much, maybe more, than his small daughters. He always had to explain the movie to us afterwards. What we missed with our eyes, he saw with his ears and mind.

My First Realization

The first time I can recall thinking of my father as a blind man was when I was around seven and a newspaper reporter came to our house to interview Dad for a feature story. Following the interview, the reporter asked my younger sister and me what it was like having a blind father. Neither of us had an answer to give him. We didn't know.

I did not think of my father as sightless. He was my father—that was all I knew. I thought nothing of walking down streets with him, my small hand tucked protectively in the bulk of material at his elbow. Slowing down at corners, curbs, and stairs for him seemed inborn, natural, something everyone did for their fathers. I thought all daddies read to their children from colorful, printless storybooks. His fingers moved rapidly over the raised dots, and when we, in fun, would stop them by covering his big hand with our small ones, he would teasingly exclaim, "But, I can't see!" The final comprehension that he actually could not see, at least not with his eyes, did not come as a shock or surprise; it was merely a final

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statement to what I suppose I had long known.

My father is an extraordinary man. Everyone tells me so and I agree with them; not because they are my friends or he is my father, but because I can see what and how he accomplishes and achieves despite his blindness. He never allows his blindness to act as an excuse or burden to accomplishing what he desires. His development of his other four senses compensates in many ways for his lack of vision. My father's ability to distinguish sounds has never ceased to amaze me. When we were little and would stumble up the stairs early each morning to take our turn practicing the piano, my father would greet us each by name before we said a word. He, with his keen listening skills, differentiated the sound of our footsteps on the kitchen linoleum, and they gave us away every time.

Attitudes About the Handicapped

I would never, in describing my father, use the word "handicapped." He is blind, not handicapped, simply because he never allowed his inability to see affect his personality, activities, or realization of goals. The term handicapped always implied to me the sightless accordian player, begging money and pity on an unknown street corner. Or, handicapped people were the blind dinner guests my father would bring home occasionally from the office. We would help serve them and then stifle our rude giggles as we watched them play "hit and miss" with food, fork, and mouth. Handicapped individuals were dependent on others. They let others do for them what they should have been capable of doing for themselves. They allowed their sightlessness to hinder them in both activity and aspirations. My father, in contrast, was independent, admired, intelligent, successful and capable in work, church, and all else he undertook. My emotion toward the handicapped included pity, and no one could ever pity my father.

Through the years of living under my father's influence, I gained much "insight," but little compassion toward the blind. I tended to be impatient and intolerant of their inabilities to cope with society. I was aware of their problems, all the way from putting toothpaste on a toothbrush to finding and securing employment; but because my father had been able to surmount similar obstacles, I expected them to do the same. I was unsympathetic to any blind individual who didn't. My intolerance extended to all people who failed to use their capabilities. "I can't" or "it's impossible" were meaningless excuses. This intolerant attitude, especially toward the blind, changed abruptly in the summer of my 16th year.

A Change in Attitude

Every summer my father, who works as the state director of Services for the Visually Handicapped in Wyoming, directs a three week camp for blind people, ages eight to 80. To please him, and because of lack of employment elsewhere, I reluctantly went along with him to serve my time as an intern. My previous experience with the camp consisted of a short two-hour visit at age eight, so I didn't really know what to expect. However, my active mind conjured up scenes similar to Florence Nightingale amidst helpless, suffering souls. I was determined to heal those blind people of their dependency on others and instill in them a desire to achieve. What I encountered at the camp during those short weeks surprised, pleased, and somewhat distrubed me. I did not dole out my medicine as planned, but instead received it myself in ample quantities from those at camp.

The camp was a rustic, old CCC camp left over from the depression. The facilities at the camp provided an opportunity for a blind person to be almost totally independent. Paths outlined with planks of wood enabled the blind student, by maneuvering his cane from side to side, to enjoy complete independence while walking. The total area of the camp was small, the meals prepared by cooks, and the company, including most of the staff, were blind. All of these factors combined to make an ideal living and learning environment for the blind person. Never before had I ever observed such patience, excitement, sincere friendliness, and eagerness to learn. I discovered that most of the blind people immensely disliked being a burden to others and desired to become self-sufficient.

However, learning to be independent takes much hard work, time and effort on the part of both teacher and student. The lack of personal know-how, and society's impatience and inability to teach them how to be self-supporting keeps many handicapped people on a life-long leash. Society as a whole seems to find it easier to stamp the stereotype, "handicapped," on those less fortunate. We judge them incapable, and then act condescendingly, with pity or nervousness, when the "poor unfortunate souls" are encountered; rather than treat them as worthwhile individuals, eager to learn to do for themselves.

It is in this society that the classes at the camp taught blind individuals to live. Classes were offered in a variety of areas, such as home repairs, public speaking, mobility, cooking, and personal care. On one occasion I attended a class studying the special social problems of blind people. I sat stunned as I listened to the problems many blind students faced from day to day in public schools. It hurt me to hear of the pity, impatience, and intolerance inflicted on them by classmates, schools, and families. It embarrassed and angered me because I knew that I, who should have known better, had often been a part of that society.

The students at camp that summer made me aware of how thoughtless and demanding I had been. When I returned home at the end of the three weeks, my attitude about "handicaps" and blind people had changed. I viewed and treated *all* people with more respect and genuine compassion. I had learned that the greatest handicap for blind people is not their blindness, but rather the attitudes and intolerance of the rest of society toward them.

Ms. Shumway is a student at Brigham Young University, Provo, Utah, where she is studying business education and music.

Review

Low Vision Care, by Edwin B. Mehr and Allen N. Freid. Chicago: The Professional Press, 1975. 254 pp. $36.00.

Reviewed by Randall Jose, O.D.

The care of partially-sighted persons has found new significance in the "blindness system" of today. The importance of a thorough evaluation of an individual's residual vision has become apparent in all aspects of social, vocational and recreational programs offered to partially-sighted individuals. Drs. Mehr and Freid have made a substantial contribution to the continuation of this emphasis in care through their new text, *Low Vision Care*.

The book will be found to be an informative, interesting, and relevant text for the student or professional. It contains information important to the work of the optometrist, opthalmologist, educator, mobility instructor, social worker, and any others involved in low vision care. Professionals can extract from the text information valuable to the services they offer to partially-sighted people. The chapter designations make it quite easy for an individual to find the portions of the book that would be of the most interest for his field.

The first six chapters introduce the newcomer to the low vision field. They provide the reader with the socio-logical and epidemiological background that is needed to thoroughly understand the needs of the partially-sighted and the goals of the low vision evaluation. They put the reader in the appropriate psychological setting to deal with the total rehabilitation as well as with the rehabilitation of a partially-sighted person.

For the practitioners involved in the low vision examination itself, the authors introduce a systematic approach to the evaluation of the visual capabilities of a patient. They indicate those factors which may influence a patient's success with optical aids to assist the practitioner in understanding the responses obtained from patients during the examination. A discussion of the physiology of the abnormal eye is presented. Such discussion is needed if the reader is to understand the rehabilitating effects of ocular pathology and how it affects the individual's ability to function visually. This particular chapter is an excellent resource for all those working with partially-sighted patients.

The chapters on magnification, optics of the various types of aids, and examination

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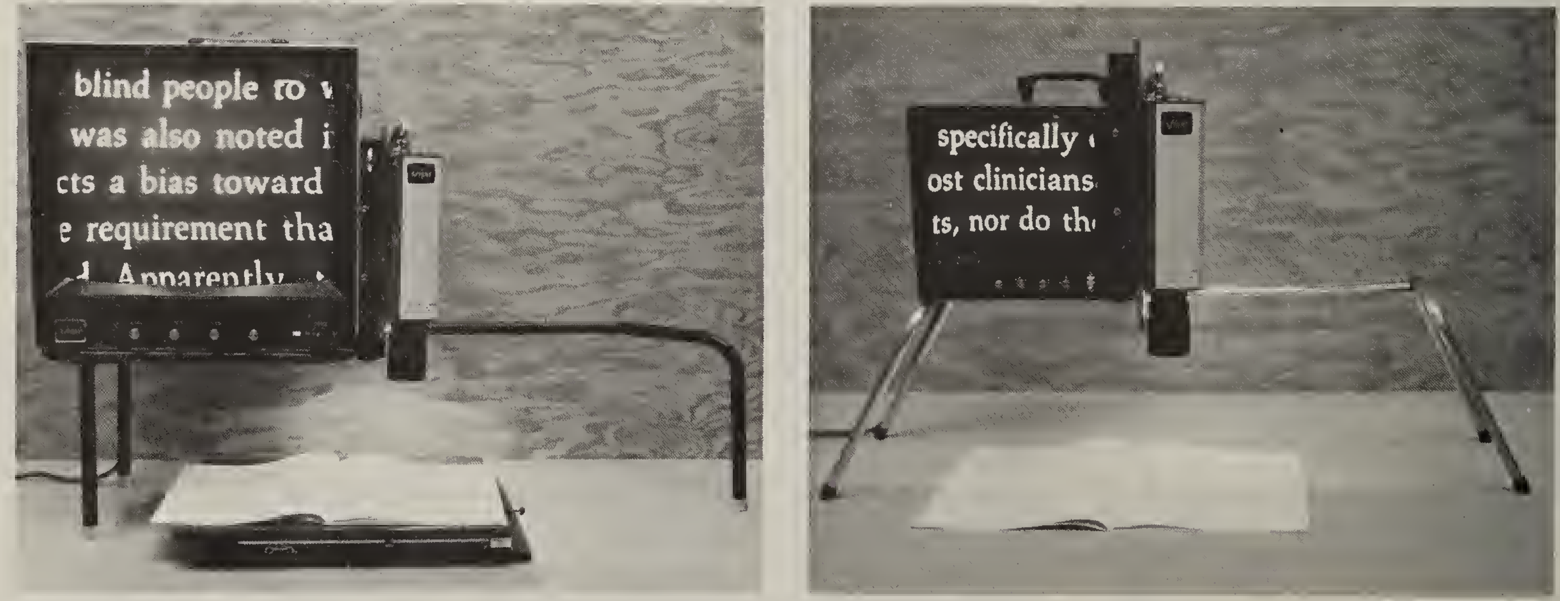
We strongly suggest that no individual purchase CCTV aids without a full low vision evaluation, and recommendation to do so from a low vision specialist. In an effort to make such professional evaluations available to anyone interested in our equipment, we are working with low vision clinics in areas wherever the need becomes evident. For the address of such a clinic, or for further information, you may call or write X/PERT's Canoga Park, California office.



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techniques are mandatory reading for all examiners. For the practictioner who desires to participate in this exciting aspect of vision care, this is a well-written and easily understood introduction to the low vision examination. For the experienced practitioner, it goes into a lot of detail on optics and magnification, and introduces new techniques which will be a valuable asset to the practitioner in his patient care program. These same chapters are also important for others to read as they describe the goals and objectives of the *thorough* low vision examination. It shows the necessity for providing clients and students the opportunity to receive more than the 15–30 minute evaluations for optical aids that is frequently practiced today.

The chapters on acuity measurements will help the reader understand the significance of the myriad of notations that are used to designate acuity. The discussions on factors which will affect the acuity measurement are important for all to know who work in this field. It points out the fallacy of using "numbers" to describe an individual's functional vision.

The text does not leave off with the examination. It goes into the treatment options available to the practitioner and presents the limitations as well as the capabilities of the aids. For those not working with direct patient services, an excellent selection of optical aids is presented. Photographs of the aids assist the novice in identifying the various aids and understanding their value in providing magnification.

The importance of training is covered in the text. I believe this chapter could have benefited from a few case presentations. A discussion of a few of the author's patients and their problems in adapting to the prescribed aids would have made this a much more valuable chapter. It was apparently written for in-office training only; therefore it has limited value to the educator, etc. who will be working with the patient after the aid has been prescribed.

Illumination is an optical aid available to everyone. The chapter on illumination should be read in detail by everyone. It's such a simple aid, but probably the most misunderstood. Application of some of the simple guidelines presented will often provide more dramatic and rewarding improvements in visual functioning than the most sophisticated aids. It's important for those working with the partially-sighted to realize that "lots of light" isn't always benefical.

Low Vision Care is an excellent text which can be successfully utilized by all members of an interdisciplinary team providing low vision/rehabilitation services. It serves as the primary text for all professional students. The material is well-presented, and it's a comprehensive text on the total vision rehabilitation of partially-sighted people. Drs. Mehr and Freid can be commended for their efforts in producing this long needed text. It will make a substantial contribution to the field of low vision care.

Dr. Jose is director of the low vision clinic and is on the faculty at Pennsylvania College of Optometry, Philadelphia.

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Elaine M. Siegel, librarian.

Barrier Free Design: Report of a United Nations Expert Group Meeting, edited by Susan Hammerman and Barbara Duncan. *International Rehabilitation Review* (Rehabilitation International, 219 E. 44th Street, New York, New York 10017), Vol. 26, No. 1, First Quarter, 1975, pp. 1–36. Report emanating from an international meeting held in June 1974 to investigate the physical barriers confronting the handicapped in public housing, transportation, and community facilities. Recommendations for the elimination of these barriers are given.

Barrier Free Site Design. U.S. Department of Housing and Urban Development, Office of Policy Development and Research (Copies available from: Superintendent of Documents, Government Printing Office, Washington, D.C. 20402), April 1975, 82p. Illus. $2.30. Research was conducted by the American Society of Landscape Architects Foundation under U.S. HUD Contract No. H-2002-R. Included are diagrams and specifications for making the outdoor environment accessible to handicapped persons, current legislation by states, and a bibliography on environmental design for the handicapped.

Utilisation of Low Vision in Adults Who Are Severely Visually Handicapped, by Natalie C. Barraga. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 59, No. 695, March 1975, pp. 57–63. Paper originally presented at Fifth General Assembly of the World Council for the Welfare of the Blind, Sao Paulo, Brazil, August 1974. The author, professor of special education at the University of Texas, Austin, advises professionals in the education and rehabilitation fields to concentrate on clients' use of residual vision, and to treat low vision clients as "seeing" rather than "blind" individuals.

Activities of Daily Living: A Program in Life-Orientation, by Linda Meehan. *The Florida School Herald* (Florida School for the Deaf and the Blind, Post Office Box 1209, St. Augustine, Florida 32084), Vol. 74, No. 8, April 1975, pp. 1–3. The Florida School for the Blind's student "Diners Club" is described by one of the teachers who conceived the idea. All students, divided into groups, compete to achieve the most improved eating skills, table manners, social skills, and independence.

Report of the Conference of Blind Vendors, by Arthur Segal. *The Braille Monitor* (National Federation of the Blind, 2652 Shasta Road, Berkeley, California 94708), June 1975, pp. 239–247. The author is a vending facility operator, and president of the Philadelphia Blind Merchants Guild and the Pennsylvania Blind Merchants Guild. He summarizes a two-day workshop sponsored by the Guilds, and held in Philadelphia, Pennsylvania, March 1975, to inform blind vendors of the ramifications of the Randolph-Sheppard Act Amendments of 1974 (Public Law 93-516).

The Development of a Scale in Orientation and Mobility for Multiply Impaired Blind Children, by Randall K. Harley, John B. Merbler and Thomas A. Wood. *Education of the Visually Handicapped* (Association for Education of the Visually Handicapped, 919 Walnut Street, 4th Floor, Philadelphia, Pennsylvania 19107), Vol. 7, No. 1, March 1975, pp. 1–5. Article discusses the genesis of the Peabody Mobility Scale, designed to assess ability in orientation and travel skills. Areas covered by the Scale are locomotion activities, sensory training, concept development, and mobility skills.

The Role of the Teacher for Visually Handicapped in Vision Assessment, by Dorothy Arensman. *Education of the Visually Handicapped* (see address above), Vol. 7, No. 1, March 1975, pp. 5–8. The author, an itinerant teacher for the visually impaired, suggests procedures and materials to be employed by teachers when called upon to assess students for possible inclusion in a visually impaired program.

Radio Reading Services for the Blind, by Harold E. Carter. *Illinois Braille Messenger* (Illinois Federation of the Blind, Post Office Box 1336, Springfield, Illinois 62705), Vol. 46, No. 3, June 1975, pp. 31–37. Report on the first national conference on Radio Reading Services for the Blind, sponsored by the American Foundation for the Blind, and held in Oklahoma City, Oklahoma, March 10-13, 1975.

Radio Reading for the Blind: Open Channel Broadcasting, by Florence Grannis. *The Braille Monitor* (see address above), April 1975, pp. 150–153. The author is assistant director in charge of Library and Social Services, Iowa Commission for the Blind. Here she discusses the merits of open channel broadcasting for the blind (and sighted), how to obtain free or minimally priced air time, and the components of successful programming.

Effects of Supervisors' Sex and Level of Authoritarianism of Evaluation and Reinforcement of Blind and Sighted Workers, by Larry D. Baker and Nicholas DiMarco. *Journal of Applied Psychology* (American Psychological Association, 1200 17th Street, N.W., Washington, D.C. 20036), Vol. 60, No. 1, February 1975, pp. 28–32. Revision of a paper presented at the Midwest Meeting of the American Institute of Decision Sciences, Minneapolis, Minnesota, May 1974. In this laboratory study, blind workers were rewarded significantly more than sighted workers for identical performance, regardless of level of authoritarianism or sex of experiment subjects in the supervisory role.

Blind Love, by Patrick Cauvin. Translated by Elaine P. Halperin. Houghton Mifflin Company (2 Park Street, Boston, Massachusetts 02207), 1975, 215p. $6.95. Originally published in French under the title *L'Amour Aveugle,* 1974, this novel, set in France, features a blind main character.

Sun and Shadow, by Rose Resnick. Atheneum Publishers (122 E. 42nd Street, New York, New York 10017), 1975, 274p. $10.00. Full-length review appeared in the September 1975 issue of the *New Outlook.*

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Agency Administration

Obtaining Money from Foundations, by Raymond F. Dalton, Jr. and Peter M. Hayman. *Rehabilitation Literature* (National Easter Seal Society, 2023 W. Ogden Avenue, Chicago, Illinois 60612). March 1975. Vol. 36, No. 3, pp. 73–81. This paper provides the reader with an overview of the nature, scope, and activities of foundations that give program grants, and the techniques and resources associated with fundraising.

A Bill of Client Rights and Responsibilities, by Stephen S. Weinrach and Lewis B. Morgan. *Personnel and Guidance Journal,* (American Personnel and Guidance Association, 1607 New Hampshire Avenue, N.W., Washington, D.C. 20009), April 1975, Vol. 53, No. 8, pp. 557–562. This article gives voice to the emerging demand of clients' rights in counseling relationships. It also questions the counselor's role as an authoritarian or paternal figure which may repress the client's sense of autonomy and responsibility. The authors list a bill of rights and responsibilities aimed at improving and equalizing the client-counselor relationship.

Aging

To Find the Way to Opportunities and Services for Older Americans. Administration on Aging, U.S. Department of Health, Education and Welfare (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402), 1975. DHEW Publication (OHD) 75-20807. This pamphlet contains general information to help the aging citizen adjust to retirement and receive the fullest benefits available.

Audio Materials

Kinesics: Body Language. General Cassette Corporation (1324 North 22nd Avenue, Phoenix, Arizona 85009), $6.95. A cassette program.

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Directories

Registration of Nordic Projects Relating to Disability 1975-01-01. The Swedish Institute for the Handicapped (Fack, S-16125, Bromma 1, Sweden), 1975, 234 p. Contains descriptions of 221 current research projects relating to services for handicapped people in the Nordic countries.

Education

Mainstreaming: A Fashionable Idea, by Rance Henderson. *The Virginia Guide* (Virginia School for the Deaf and Blind, Staunton, Virginia 24401). April 1975, Vol. 101, No. 4, pp. 1–3. Discusses the pros and cons of integrating handicapped children into public school programs.

Employment

The Able Disabled, by James H. Sears. *Journal of Rehabilitation* (National Rehabilitation Association, 1522 K Street, N.W., Washington, D.C. 20005), April 1975, Vol. 41, No. 2, pp. 19–22. This article is based on the 1973 survey of employed handicapped workers conducted by the President's Committee on Employment of the Handicapped. The study showed that disabled workers had good performance, attendance, and safety records.

The Government Job-Hunting Game. *Performance* (President's Committee on Employment of the Handicapped, Washington, D.C. 20210), April 1975, Vol. 25, No. 10, pp. 7–10. Helpful information to aid physically handicapped persons find jobs in government service.

Periodicals

Reading Abstracts (Essay Press, Inc., P.O. Box 2600, La Jolla, California 92037), twice a year, in April and October; individuals, $7.50 per year; institutions, $15.00 per year. Contains abstracts of books and articles dealing with a wide range of subject matter, including special education, auditory perception, language acquisition, and psycholinguistics.

Research

International Register of Research on Blindness and Visual Impairment, by Dr. J.M. Gill, (Warwick Research Unit for the Blind, University of Warwick, Coventry CV4 7AL, England), £ 5. This register contains the names, addresses and descriptions of projects being done in the fields of natural, behavioral, and technological science bearing on problems arising from visual impairment. Purely medical research is not included, but it does contain research on the causes of blindness, work with low vision patients, sight restoration and management, and referral of patients with deteriorating visual capacity.

Prevalence of Selected Impairments, United States-1971, by Charles S. Wilder, National Center for Health Statistics, Health Resources Administration, U.S. Public Health Service. *Vital and Health Statistics* (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402), Series 10, No. 99, DHEW Publication No. (HRA) 75-1526, May 1975, 64p. $1.30. Statistics on the prevalence and impact of impairments involving vision, hearing, speech, paralysis, and absence of extremities. The data includes the distribution of impairments by age, sex, race, income and region.

News in Brief

- Douglas C. MacFarland, Ph.D., director of the Office for the Blind and Visually Handicapped. U.S. Department of Health, Education and Welfare, and J. Kenneth Cozier, a businessman from Cleveland, Ohio, will receive the 1975 Migel Medals for outstanding service to blind persons from the American Foundation for the Blind. The awards will be presented October 23 at the AFB headquarters in New York.

The medal, established in 1973 to honor the late M. C. Migel, first president of the AFB, is designed to recognize professionally employed practitioners in education, rehabilitation, and social welfare concerned with blind persons and lay persons who have voluntarily dedicated themselves to advancing services for blind persons.

Dr. MacFarland is receiving the professional award and Mr. Cozier the layman award.

Dr. MacFarland has been active in work for the blind for over 30 years. Prior to becoming director of the Office for the Blind and Visually Handicapped, which is the principle resource in the Rehabilitation Services Administration for rehabilitation programs serving blind and visually handicapped persons, he was director of the Virginia Commission for the Blind and Visually Handicapped. He also worked for the New Jersey and Delaware Commissions for the Blind and served two terms as president of the American Association of Workers for the Blind.

"Throughout his career, Dr. MacFarland has been an outstanding leader both in this country and abroad in fostering the development of rehabilitation programs to train blind persons for gainful employment," Loyal E. Apple, executive director of the AFB noted in making the announcement.

Among Dr. MacFarland's many awards is the Order of the Republic (grade of officer) presented to him by the government of Tunisia for the moral and material support given by him to the activities of the National Union of the Blind of Tunisia to help the blind of that country.

"Mr. Cozier is receiving the Migel Medal because of his great interest in work for the blind and his many years of continued extensive support of such programs in the blindness area," Mr. Apple said.

In addition to serving on AFB's Board of Trustees for the past ten years, Mr. Cozier is a member of the Boards of both the Ohio Society for the Prevention of Blindness, Inc. and the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped (NAC). He is also on the advisory committees of the Ohio Bureau of Services to the Blind and the State Library of Ohio, and he has been very active in the Cleveland Society for the Blind, in the past as president and currently trustee.

Mr. Cozier was awarded the honorary degree of Doctor of Humane Letters by the University of Nebraska, Lincoln. His other awards include the Alfred Allen Award from the American Association of Workers for the Blind given in recognition of devoted and personally involved service to the blind.

- Following the 1976 Olympics in Montreal, Toronto will host the Olympiad for the physically disabled. Fifty countries are expected to enter as many as 1,700 athletes, of which approximately 300 will be blind. The athletes, all highly trained competitors, will be classified by the degree of their disability and compete in specified classes. Swimming, track, discus, shotput, wheelchair slalom racing and pentathlon are examples of the events that will be held.

- The National Society for the Prevention of Blindness (79 Madison Avenue, New York, N.Y. 10016), has released the first issue of its newsletter *Prevent Blindness News*. The newsletter presents the latest information in the fight to preserve sight, as well as the activities of the organization.

- Two ophthalmologists from Stanford University Medical Center, Drs. Milton Flocks and A. Ralph Rosenthal, are developing a television eye test. For the test, the television viewer will be instructed to sit a certain distance from the television (the distance depending upon the size of the screen) and look at a dot in the middle of the picture while spots located strategically around the screen rapidly blink on and off. The viewer will be able to check his own results and detect such eye problems as glaucoma and retinal degeneration. Viewers are urged to see an ophthalmologist if an eye disorder is indicated by the test.

- Scientists at Stanford University Electronics Laboratories, California, are developing a C-MOS electronic ear implant to aid deaf people. The device would perform the operations of the damaged or missing hair cells of the inner ear which are responsible for converting sound to electrical signals. The C-MOS (complementary metal-oxide-semiconductor) system works by directly injecting electrical signals into the auditory nerve which then sends signals to the brain.

- Best sellers of 1974–75 are available in cassette form from the library of the Jewish Guild for the Blind (15 West 65th Street, New York, N.Y. 10023). A catalog of more than 30 titles is available on request from the Jewish Guild for the Blind.

- A catalog listing an extensive line of new rehabilitative play equipment for use with children who have physical, mental or emotional handicaps is available from Thera-Play Products, 29-24 40th Avenue, Long Island City, N.Y. 11101.

- The Library of Congress, Division for the Blind and Physically Handicapped, has compiled a reference circular on closed circuit television systems for the visually handicapped. This circular lists some of the systems currently available and includes articles evaluating these devices. Copies of this circular are available from the Reference Section, Division for the Blind and Physically Handicapped, Library of Congress, Washington, D.C. 20542.

- Volunteer Services for the Blind (919 Walnut Street, Philadelphia, Pa. 19107) publishes an abridged braille edition of *Chess Life and Review.* Subscriptions are $15.00 per year.

- Blind and visually handicapped homemakers in Lancaster County, Pennsylvania are now enjoying an experimental radio program called "Cook-Along With Us." The program was initiated by the Junior League of Lancaster in cooperation with the Lancaster County Branch of the Pennsylvania Association for the Blind. committee of 12 volunteers plans the programs and selects the low-cost, easy to prepare recipes.

APPOINTMENTS

- Columbia Lighthouse for the Blind: **Charles Fegan,** director.

- Cleveland Society for the Blind: **Marvin J. Laronge,** president, board of trustees.

- Industrial Home for the Blind: **Joseph J. Larkin,** executive director.

AWARDS

- Peter J. Salmon Award: **Warren Wilson,** deaf-blind power sewing machine operator, National Industries for the Blind, Denver.

- Order of the Republic of Tunisia: **Dr. Douglas C. MacFarland,** director, Office for the Blind and Visually Handicapped, Rehabilitation Services Administration.

RETIREMENTS

- Veterans Administration: **Russell C. Williams,** chief of blind rehabilitation.

- New Hampshire Office of Blind Services: **Carl Camp,** director.

DEATHS

- **Charles Hedkvist,** former president, World Council for the Welfare of the Blind, in April 1975.

COMING EVENTS

October

11-15 National Rehabilitation Association, Annual Conference, Cincinnati, Ohio.

14-18 American Occupational Therapy Association, Annual Conference, Milwaukee, Wisconsin.

15 White Cane Safety Day.

16-19 American Board of Ophthalmology, Philadelphia.

16-23 National Conference of Catholic Charities, Annual Meeting, Cincinnati.

19-23 National Recreation and Park Association, Dallas.

22-25 National Association of Social Workers, Professional Symposium, Hollywood-by-the-Sea, Fla.

26-30 Gerontological Society, 28th Annual Scientific Meeting, with American Geriatrics Society, Louisville, Ky.

29-31 American Association of Workers for the Blind, Pennsylvania-Delaware Chapter, Annual Meeting, Wilkes-Barre, Pa.

November

2-7 Fifth Pan-Pacific Conference on Rehabilitation of the Disabled, Singapore.

5-7 International Audio-Tutorial Congress, Annual Conference, Louisville, Ky.

6-7 National Easter Seal Society for Crippled Children and Adults, 56th National Convention, Louisville, Ky.

7-8 Association for the Education of the Visually Handicapped, Mid-Atlantic Region, First Biennial Conference, Wilmington, Del.

11-15 National Association for Education of Young Children, Dallas.

12-13 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Little Rock.

13-15 International Symposium on Cataracts, Iowa City.

16-19 American Association of Homes for the Aging, 14th Annual Conference and Meeting, San Diego, Cal.

16-20 American Public Health Association, Annual Meeting, Chicago.

18-20 International Conference on the Situation of Blind Women, Belgrade, Yugoslavia.

29-December 4 Association of University Professors in Opthalmology, Washington, D.C.

December

3-5 National Council on Philanthropy, 18th National Conference, Washington, D.C.
17-20 American Public Health Association, National Round Table Conference, New Orleans.

February 1976

1-7 Canadian White Cane Week.
8-11 Council for Exceptional Children, Conference on Right to Education/Placement of Exceptional Children, New Orleans.
29-March 3 Council on Social Work Education, Annual Program Meeting, Philadelphia.

March

3-7 American Orthopsychiatric Association, Annual Meeting, Atlanta.
28-April 2 Second International Congress on Prosthetics Techniques and Functional Rehabilitation, Cannes, France.

April

5-9 European Congress of Opthalmology, Hamburg, Germany.
9-13 American Occupational Therapy Association, Mid-year Meeting, Atlanta.

Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display $13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, *15 West 16th Street, New York, N.Y. 10011.*

AIDS AND APPLIANCES

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CATALOGS

Optacon Catalog—products and services—a complete listing of Optacon Systems, Accessories, Training Course, and Training Material prices. Products are also pictured and described in detail. Write Telesensory Systems, Inc., 1889 Page Mill Road, Palo Alto, California 94304.

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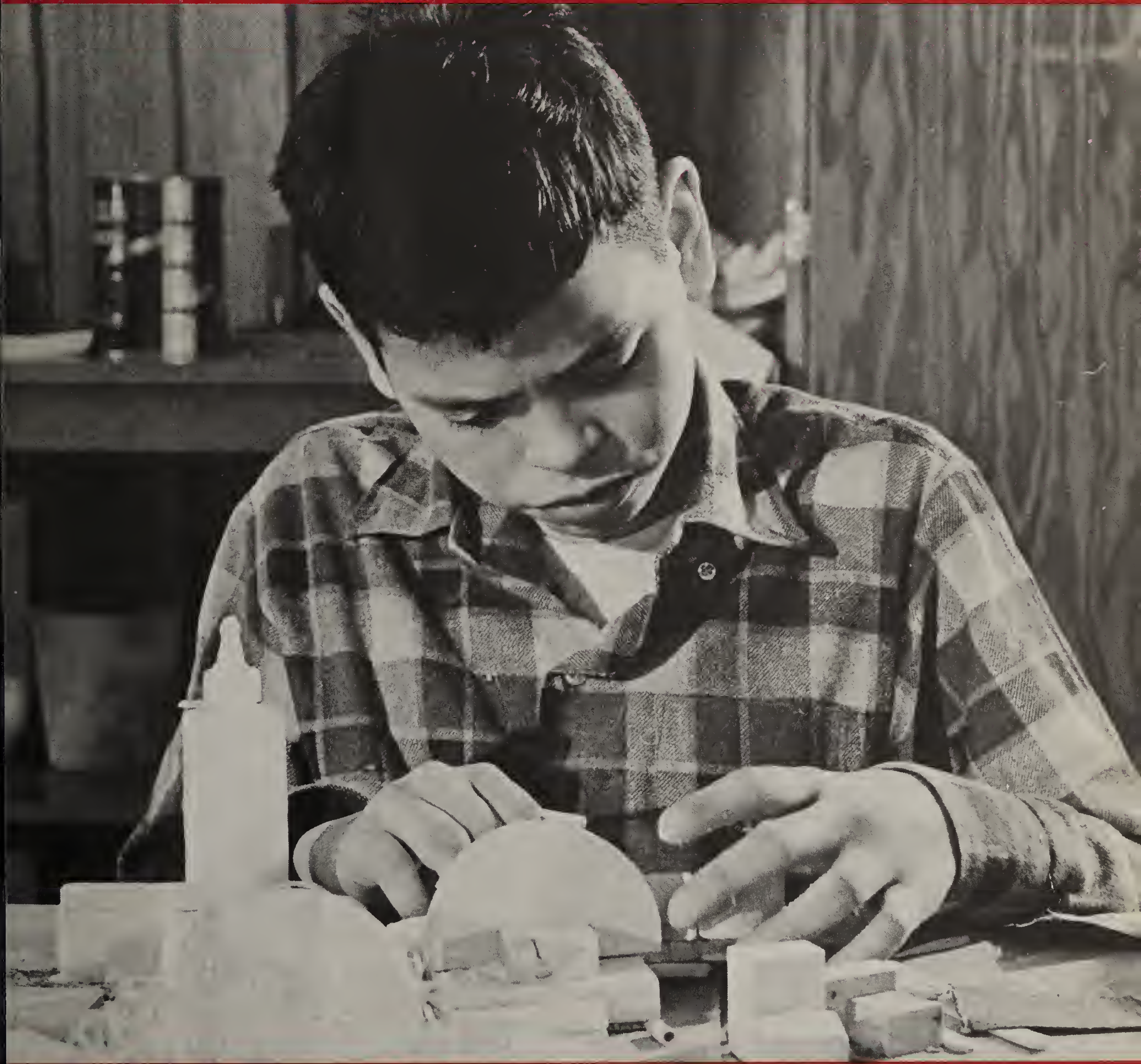

Through Art to Affect: Blind Children Express Their Feelings

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Through Art to Affect: Blind Children Express Their Feelings

JUDITH A. RUBIN, M.ED., ATR
Ms. Rubin is an art therapist at the Pittsburgh Child Guidance Center.

Abstract: *This article describes the feelings and fantasies expressed in and through art by multiply handicapped, visually impaired children. Issues dealt with include the intensity of the children's need for freedom of movement and expression; their wishes, fears, and anger about such themes as injury, rivalry, uniqueness, and blindness. Some conditions which facilitate such affective expression are also noted.*

■ Like all children, the visually impaired have many strong feelings; unlike others, they have fewer ways of expressing and coping with powerful affective states. In an exploratory art program at the Western Pennsylvania School for Blind Children (Rubin & Klineman, 1974), feelings and fantasies surfaced for most of the children in their first individual evaluation sessions with an intensity suggesting both a readiness and a need for expression. Perhaps this response was because of the open-ended nature of the interview; an invitation to choose from among a variety of media and to do whatever the child desired. Or because of the unstructured media which invited manipulation and evoked associations. Perhaps it was the symbolic nature of artistic expression, permitting fantasy creations in a manner safer than in reality. Or perhaps, the clear framework of the time, the space, and the supportive adult, which made possible a kind of "letting go" within that structure, both physically and psychologically. Maybe it was simply the availability of an interested and responsive grownup, who was genuinely receptive and non-judgmentally concerned with the child's creations and verbalizations. No doubt none of these potentially facilitating conditions would have mattered, however, had there not been the urgency, the inner pressure, the need for release of feelings and ideas, which supplied the energy for the children's expressions.

NEED FOR FREEDOM The need for a realistically restricted child to move freely is indeed great, and he can do that with a marker on paper, or with his hands in a tray of finger paint. Fluid or sticky media like clay or finger paint indeed stimulated anxiety in many, as others have noted in work with the blind (Lowenfeld, 1957; Kramer, 1972). This was due no doubt to general inhibitions about touching and to specific concerns about getting messy. Most of the children seemed intensely ambivalent, especially at first. Larry, for example, grinned as he mixed clay and water in a bowl (Figure 1), yet his verbalization was one of disgust: "Boy, this is gloppy! Muck! Muck! Yuck!"

Billy, during his first art interview, experienced an initial discomfort with fluid media, as well as a capacity to master the anxiety and to enjoy real sensory pleasure. After about two minutes spent gluing wood scraps together, he indicated that the feel of the liquid glue on his hands was unpleasant, saying, "That's all I want to do. My hands are getting sticky." He then chose to use finger paint. First he happily wetted the paper with a water-filled sponge, then paint was spooned onto the paper at his request. He touched it gingerly with two fingers, and immediately stated, "I don't think I'll do that today." Clay, his next choice, was worked with for a longer time, first with a wooden tool, then with his hands. He eventually requested more. He next used a felt-tip marker "that squeaks a lot," concentrating on the sounds it made. And then, as if he could not resist, he asked again for the paints.

This time he began with fingertips, but soon moved to the use of his whole hand, then both hands, asking several times for more paint. "We need more paint in the goosh . . . lots and lots . . . *all* of it!" What anxiety remained was now handled by a discussion of how he would wash off the paint when finished. The last ten minutes of the 30-minute session were spent happily exploring the sound, smell, and feel of the "goosh." Two months later, when Billy came in for his post-program interview, he asked first for finger paint, "that old sticky stuff," explaining that it was "a *good* kind of sticky" (Figure 2).

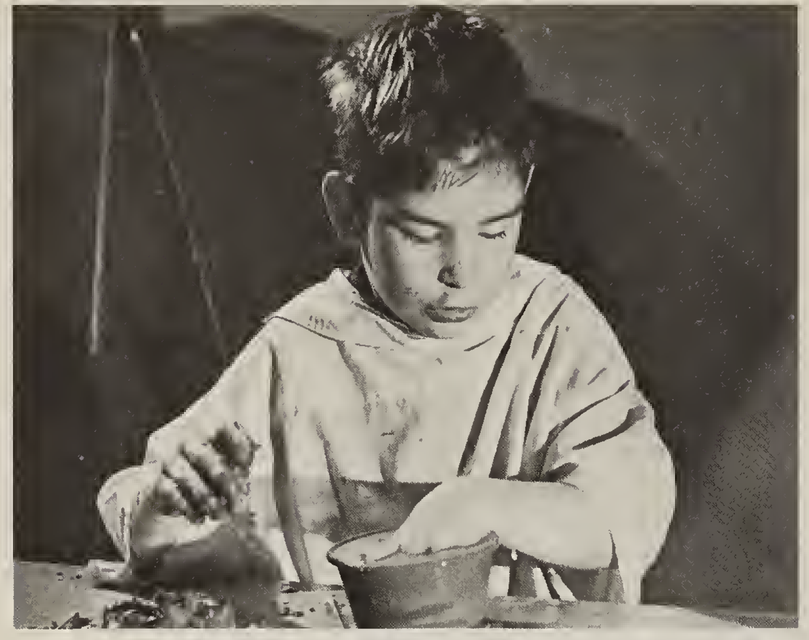


Figure 1. A bowl can contain the mess of clay and water as well as anxious feelings.

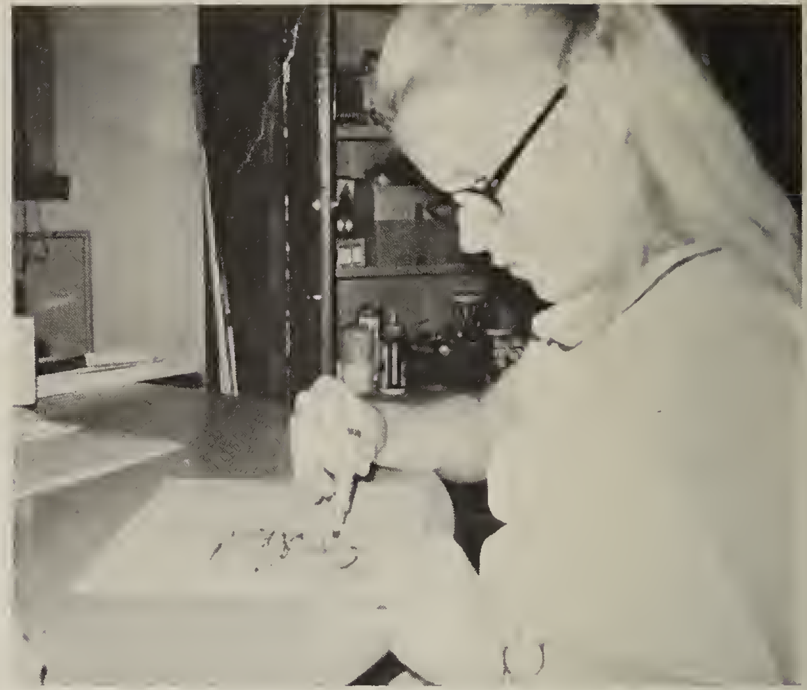
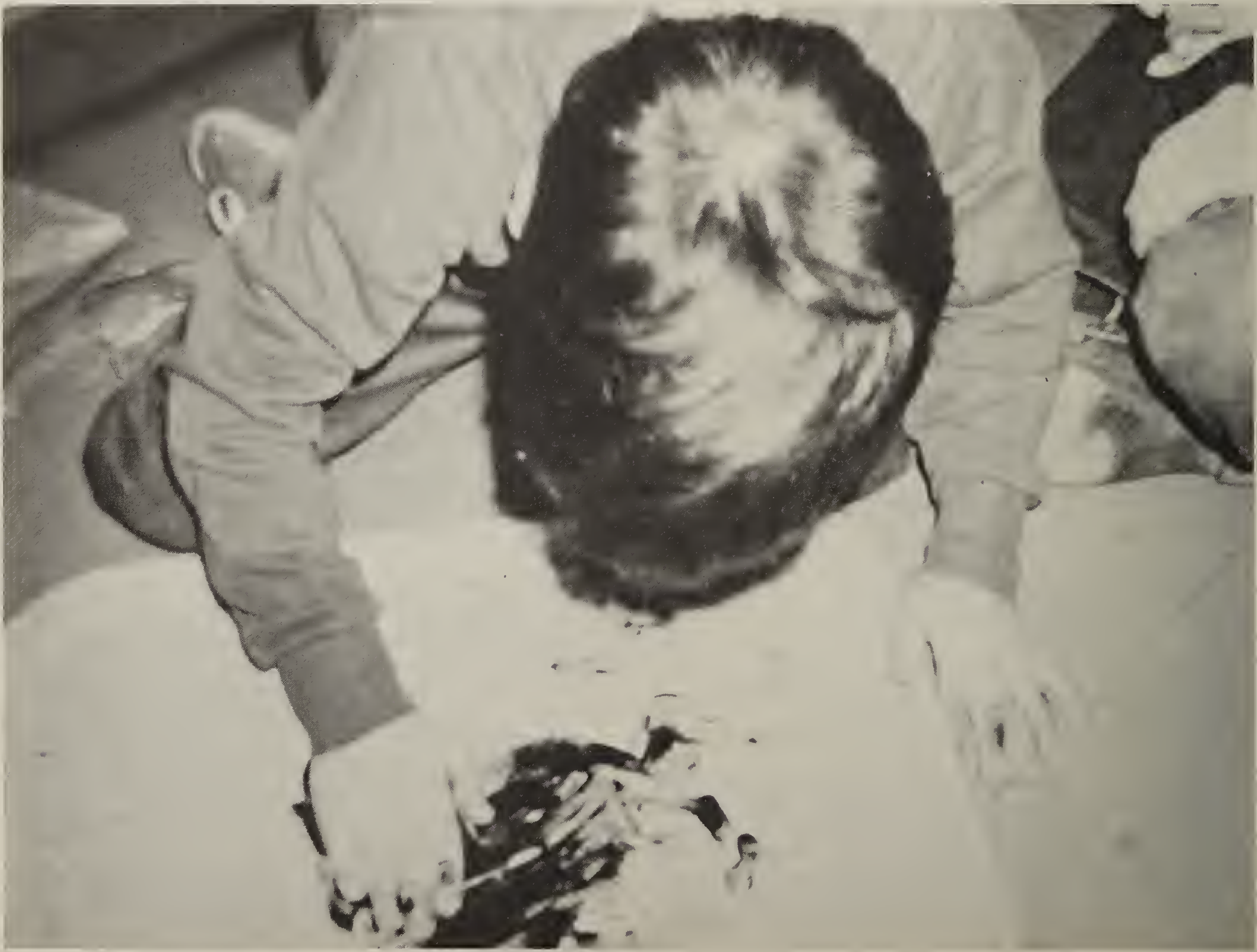


Figure 3. Using felt-tip markers, a visually handicapped girl can draw a "mind picture"—"whatever my brain and hands tell me. . . ."

Figure 2. A tray with its clear tactile boundaries can enable a blind child to fingerpaint comfortably.



For many children, anxiety about the loss of boundaries and control stimulated by fluid media was reduced through the use of bowls or trays, physical "frames" which then permitted free movement within their clearly-defined outlines. In a similar way, one partially-sighted 13-year-old conceived a kind of "time frame" within which she felt free to relax with an expressive medium. One day she demonstrated how she created "a gap in time," and was thus enabled to "wait and see what emerges to fill the gap" (Milner, 1957, p. 104). She would pause, close her eyes, sit meditatively still, and then—with clay or drawing tool—would "do whatever my brain and hands tell me to do" (Figure 3). She distinguished between drawings produced under these conditions, in which she was relaxed and unconcerned about realistic rendering, and those made with eyes close to paper, in a strained attempt at reproduction of the visual world. "I'm more free—like I was more myself—when I draw something indirect." It is significant that she called such drawings "mind pictures," and labelled her clay sculptures done in this way "personality globs," suggesting that for her these represented truly valid externalizations of her inner self.

Importance of Fantasy and Dramatic Play

In another kind of attempt to achieve freedom from the real constrictions imposed by artificial eyes, Larry created many clay rockets and stories about being an astronaut travelling to outer space. While such fantasies represented impossible wishes, it seemed important for Larry to be able to think symbolically about the unrestricted, free movement in space which he could only have in imagination. It was a similarly unchangeable reality for Larry that he had been hospitalized over 50 times in his first seven years; and had been the necessarily passive and helpless recipient of numerous medical ministrations, from examinations to operations. Yet it was helpful for him to be able to symbolically overcome his helpless passivity in dramatic play with clay tools and clay, often playing "doctor" or "dentist" to the clay or, at times, to himself as patient. He would examine mouth or eyes, give shots, administer an anesthetic, and perform fantasied operations. Thus in creative play with the media he was free to assume the active role, and thereby relive and rework the traumatic situations he had endured passively in the past.

NEGATIVE FEELINGS EMERGED While wishes for potency, for freedom, for relief from the handicap were frequently expressed and acknowledged, perhaps even more frequent were the negative feelings associated with being a child and being blind. In reviewing the material from the records of the exploratory art program, and from subsequent work with blind children in therapy and consultation to the continuing arts program at the school, it seems that the majority of feelings expressed by the children cluster around negative affective states, primarily anxiety and anger. Perhaps some examples from work with the children in the initial seven-week program, many from their first art sessions which were fully recorded, will help to convey the kinds of emotions and thoughts which emerged.

Sometimes feelings were evoked by associations related to qualities of the media, like the smell of "ether markers" which stimulated much of the doctor play for Larry. Similarly Randy, using watery finger paint, recalled the water in a wading pool he had accidentally broken, and then the milk he had spilled on his mother one day. His concern with about how dangerous he might be through the lack of vision which caused him to misjudge the size of the pool (Figure 4). Such a worry was also present in Bill's story of accidental destruction. During his first interview he was cutting and squeezing clay "worms," and suddenly recalled an upsetting incident in which he had (perhaps through curiosity) squeezed a baby turtle because: "I didn't know what it was. I squeezed it. Ooh! It got all over my bed, and did it stink! Ooh! It didn't smell *that* bad, but I couldn't stand it! . . . Oh please, I don't want to talk about it anymore!"

VULNERABILITY AND ANXIETY Almost as often, the children referred to their own very real vulnerability, and the anxiety and fear evoked by not being able to see. Randy, during another finger painting session, recalled being "on the commode" and feeling "spiders" inside, and how he was extremely scared. Larry, during his first art interview, carefully poked rows of holes into clay with a tool, and spoke of falling down a deep hole "where maybe you couldn't get out!" Carl was very careful when building a wood and cardboard bridge to make sure that it would have "no holes so that no one will fall in." Peter, whose combined cerebral palsy and partial vision made him slow and awkward, made a clay "tortoise" who "wishes he was faster" (Figure 5). He further underlined the problem, saying, "He's pretty slow, by the way." When asked if he would be the hare or the tortoise in a race he described, Peter said somewhat sadly that he'd be the tortoise, but added, "I'd hurry up." He then thought of possible dangers, saying "If I went too fast, I'd get a bump on my head! I'd fall upside down . . . What would you do if I got hurt? . . . If some of my skin came out and nothing was left but my bones?"

Similarly, the fear of being alone, abandoned, and defenseless was often expressed, as when Terry called one of her sculptures "the lost town (where) you could get all lost and the monsters could get you." The children's many separations for hospitalization were often referred to symbolically and directly, as in Jimmy's painting of the hospital where he had recently undergone open-heart surgery. Significantly, the important figure in the painting is "a mother going in to see her boy," and he spoke warmly of how she came often and held the boy's hand. But since the memory of his separation and the anxieties it aroused was still so painful, he finally said softly, "I don't want to talk about it anymore."

Feelings of Anger Released

Most outstanding, as one reviews the material, was the breakthrough from the first of strong feelings of anger. Like Burlingham's blind preschoolers, these children also typically displayed "a comparative scarcity of free aggressive expression" (1972, p. 291). Burlingham hypothesizes that, "because they realize how much they need the seeing," because they are so very dependent upon the help of the sighted, the risk of expressing anger freely is just too great. While sighted children, too, are fearful of the consequences of their own aggression, these are intensified in the mind of a blind child to whom the loss of the love-hate object means real helplessness.

HELPLESSNESS AND ANGER The vulnerability referred to earlier was in itself the cause of much resentment, often expressed symbolically through a projected image, and at times emerging directly. Terry, whose brain damage and impaired sight made it hard for her to get around quickly, spoke for her clay horsie, whining and saying petulantly, "He's tired, because somebody told him to walk around and around" (Figure 6). Joyce, in her first art interview, spoke

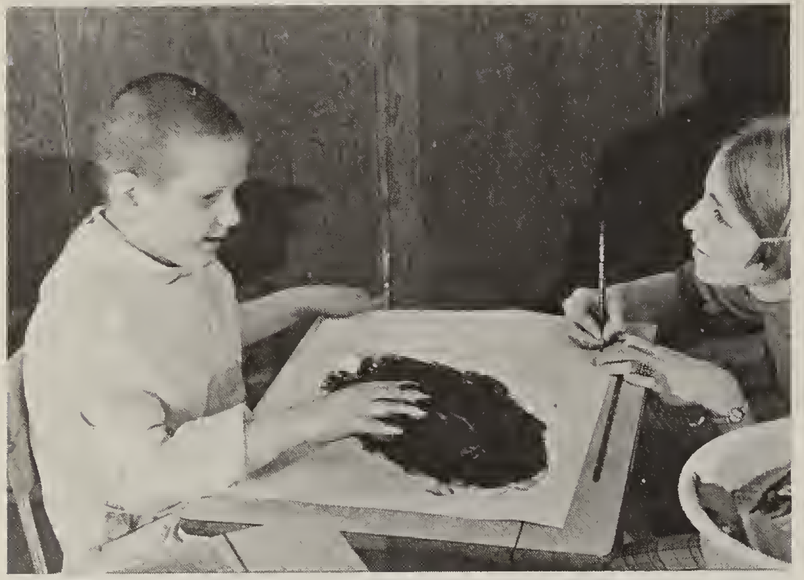
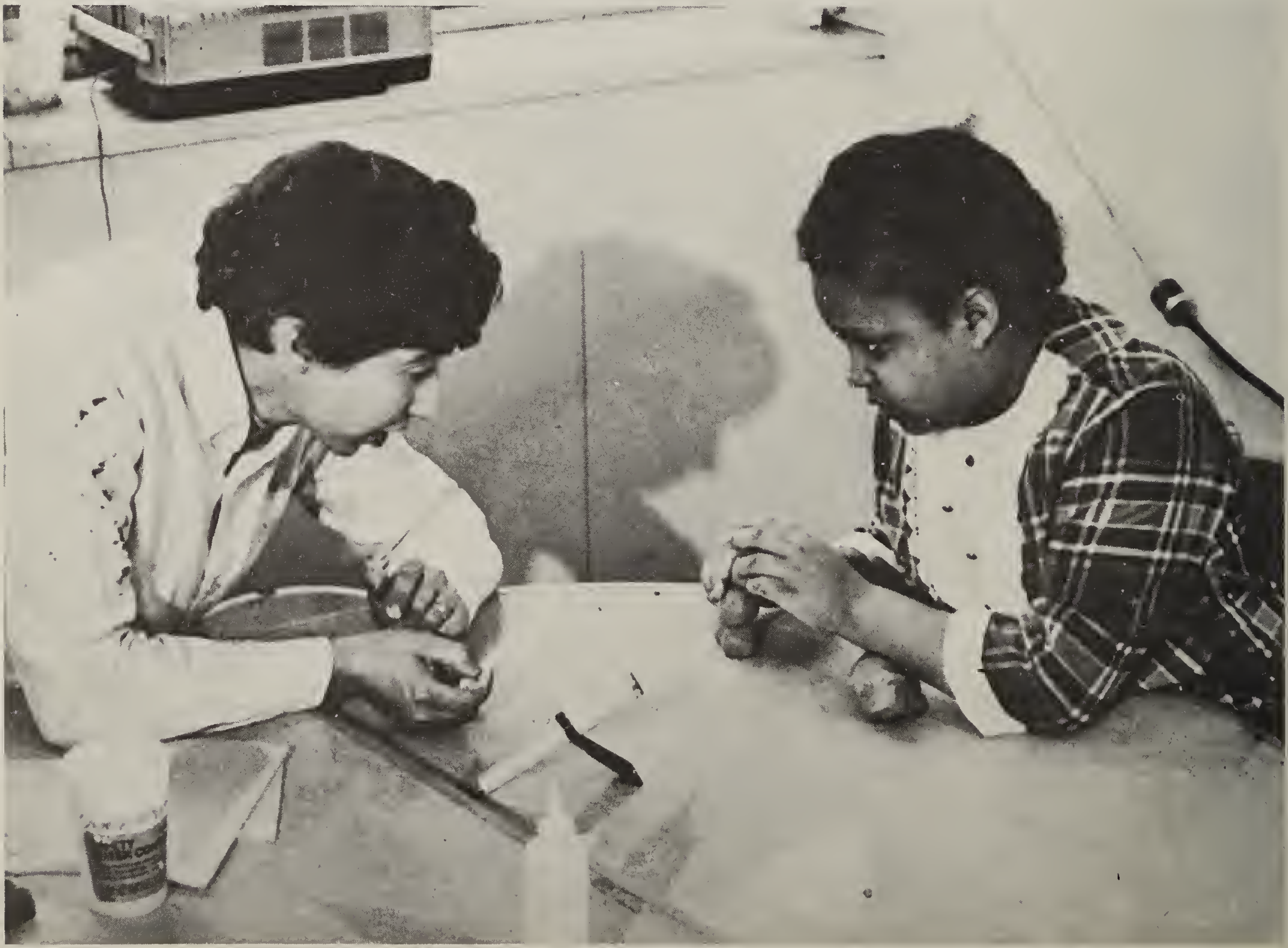


Figure 4. Working with wet fingerpaint can stimulate the telling of a story.

Figure 5. Peter makes his clay "tortoise."

Figure 6. Terry tells about her clay "horsie."



symbolically of her awareness of her difference, her greater vulnerability, and her anger at feeling so helpless. She drew a "snowman family" of three, and when asked who they were, wrote the names of her parents and herself below the figures. She said that the parents don't fight, but "I get angry the most." When asked the cause of her anger, she said with vehemence, "I just never want the sun to come out!" (Because you would melt?) "Yes!" (Doesn't the sun melt the parents, too?) "No, 'cause they're unmeltable!"

Joyce was not the only child who displayed unexpected and heretofore unknown angry feelings during the first interview. Sweet, amiable Terry began by manipulating clay, first squeezing, then pounding it, and spoke resentfully of "My sister . . . She sits there and she laughs at me. That ain't funny! It's not! She laughed at me and I squashed her half to death. I squashed her half to death. I just spanked her!" I commented that Terry must have been pretty angry, to which she responded with feeling, "Yeah!" A few seconds later she asked for more clay and slapped it between both hands, saying she was pretending it was her sister. "I'll hit her . . . Ooh, look! She's a pancake. Look!" I asked if the clay really felt hurt when it was slapped, and she said with relief, "No," continuing to pound it rhythmically, with great force. Later, in this same initial interview, she made a coiled shape which she called "a snake (who) is gonna eat all the children in here (because) he's jealous." A few weeks later, Terry used her clay sculpture of "George of the Jungle" like a puppet through which she spoke to her helping teacher, Mrs. Baxter, saying angrily, "Shut up! I'll tape your mouth . . . I'll staple your mouth!"

Violent Impulses Were Verbalized

Carl, in his first session, made a wood scrap "furnace" and spoke with a grin of "a man who sets buildings on fire." Working later on a street with many houses, he made two "electric poles" which were "to keep the *bad* guys away" (Figure 7). With a somewhat guilty grin and much excitement, he described how the bad guys would be "electrocuted and get shocked to death" by the poles if they came too close. Peter once expressed a wish to be his omnipotent clay creation, "the God of the Porky-Pines (who) swings by his long tail," and has "a special god for his helper." Asked what he would do if he were really the god, Peter verbalized violent and destructive impulses never apparent in his sweet, friendly demeanor. "I'd stab everybody. I'd just like to stab, stab, stab!"

It seemed clear that these dependent, vulnerable, awkward children utilized the expressive potential of the art media not only to pound hard on the clay, but also to express symbolically some of the resentment, envy, and retaliatory rage they felt at the sighted, especially those upon whom they were dependent. Joyce, for example, painted "a building which is a hospital, and in this hospital—there's just one patient in this hospital . . . The one patient is Mrs. Rubin . . . She had an accident. She bumped into another lady's car and . . . she punctured her eye." When asked what would happen, she said with a grin, "It's gonna blind her," going on to explain how Mrs. Rubin would then be unable to work with children in art. When asked how she herself felt about it, she asserted with a sly smile, "I don't feel anything. My sight's coming back!" Having verbalized this wish, she went on to deny her handicap completely. "I can see just like a regular person!"

"DESTRUCTION-RESTORATION" DRAMA Bill, an extremely compliant boy, in his first art session excitedly cut up a clay figure he had made and named after the program director, Dr. Klineman. "Off came Janet! Off came the body . . . she was squirming too much. She always squirms too much. I cut her in half!" He went on with this dramatic fantasy, squeezing and cutting the clay, saying sadly, "Poor Mrs. Klineman. She's real flat. Oh, she's in the hospital. The poor woman . . . Ooh! Ooh! . . . They cut her. They cut a part off . . . Now she can't move." When asked what would happen to her, he said sadly, "If they don't fix her up, she'll die."

He then proceeded to put together the pieces of clay, saying, "Yep, they're trying . . . It's hard now, since it—Ooh! Here we go! There. There. Now they're fixing her up!" (Who's fixing her up Bill?) "I am . . . Yippee!" As "Doctor Bill" he then magically restored Mrs. Klineman's missing part, symbolically restoring perhaps his own missing vision—as when, earlier in the same session, he had wrapped clay around his finger, saying that he had created "another finger." Bill sometimes wondered after such intense, destructive (albeit restorative) activity with clay if he was "bad inside" because of his bad wishes, and even wondered aloud if his blindness was a punishment for this badness. Often he would create a gift for the person he had symbolically hurt in his dramatic play, a kind of creative reparation; like a clay horse made for the student who had worked with him in a session in which she was symbolically cut up (in clay) for planning to leave Bill at the end of the art program.

Sibling Rivalry and Resentment

Sibling rivalry is probably ubiquitous, but because he is different and more dependent, the blind child may feel an even greater resentment towards his brothers and sisters. As he often depends upon them for help, he may be further inhibited in expressing such feelings. While he painted one day, Randy spoke movingly of his situation in a family of eight children. "I got seven, some boys and some girls. Whew! I hope I don't get any more! . . . I get angry at my brothers and my sisters . . . I have seven. I hope I don't get another one. Boy! That'll be eight! I only wanted *one* in the family!" When asked if that one was himself, he replied grinning, "Yup."

The jealousy is intensified because the siblings not only possess the coveted sight, but other privileges as well because of it. Randy explained his envy of his brothers who get out of school and can then go home, while he must attend a residential institution and can go home only on weekends. Still painting, he mused, "I want to get away from this school. I don't like it. I *hate* it! It's no fun . . . You got to *stay* here! My brothers go home at 2:30, and *I* got to *stay* here. It's not fair!" When asked why he has to go to a special school, Randy became visibly uncomfortable and denied any awareness of what sort of a school it was, saying, "I don't know." When asked the name of the school and why he goes there, he made clear how painful it was to acknowledge his disability. With anguish he said, "I don't know. I don't want to *hear* it!" (That's something you'd rather not talk about?) "Yeah! I just don't want to *talk* about it!"

FEELINGS ABOUT BLINDNESS It was clear that the hardest thing to talk about directly was the handicap they all shared. But, as in Burlingham's experience, "once the children are able to talk about blindness in general and their own in particular it appears to give them great relief" (1972, p. 302). We too found that "the ability to express their thoughts, fantasies, and disappointments about blindness has a liberat-

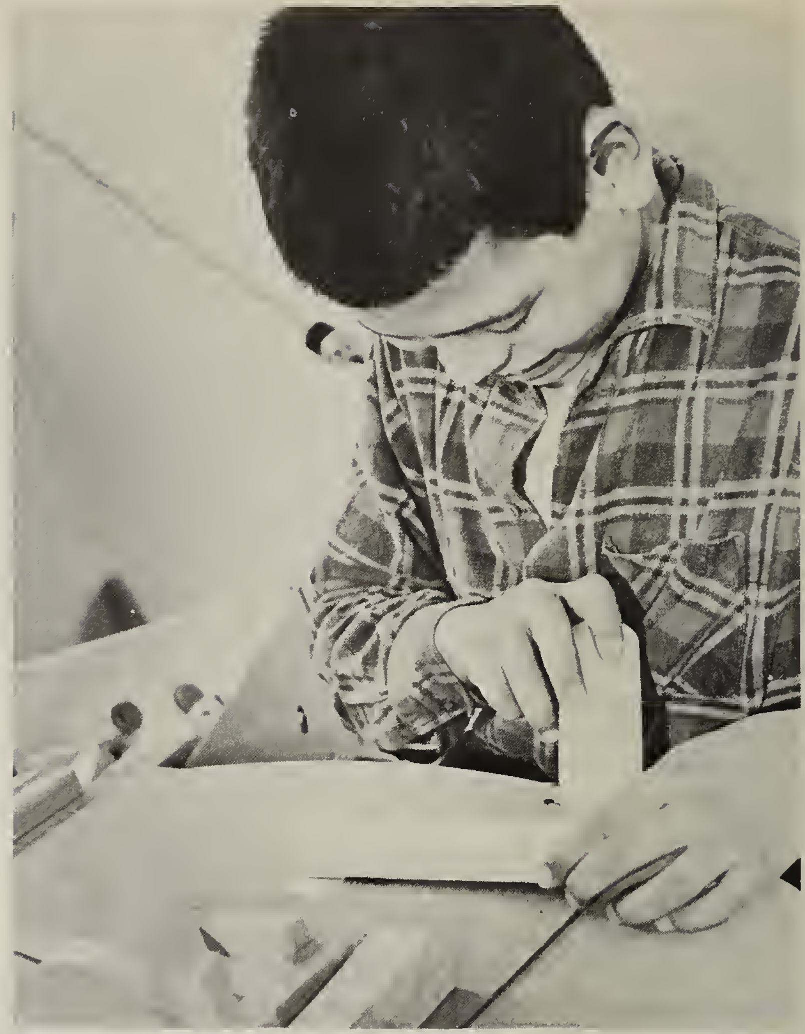


Figure 7. Carl constructs a street with houses and dangerous "electric poles."

Figure 8. The tension of anger which the child is unable to put into words can sometimes be expressed through pounding clay.

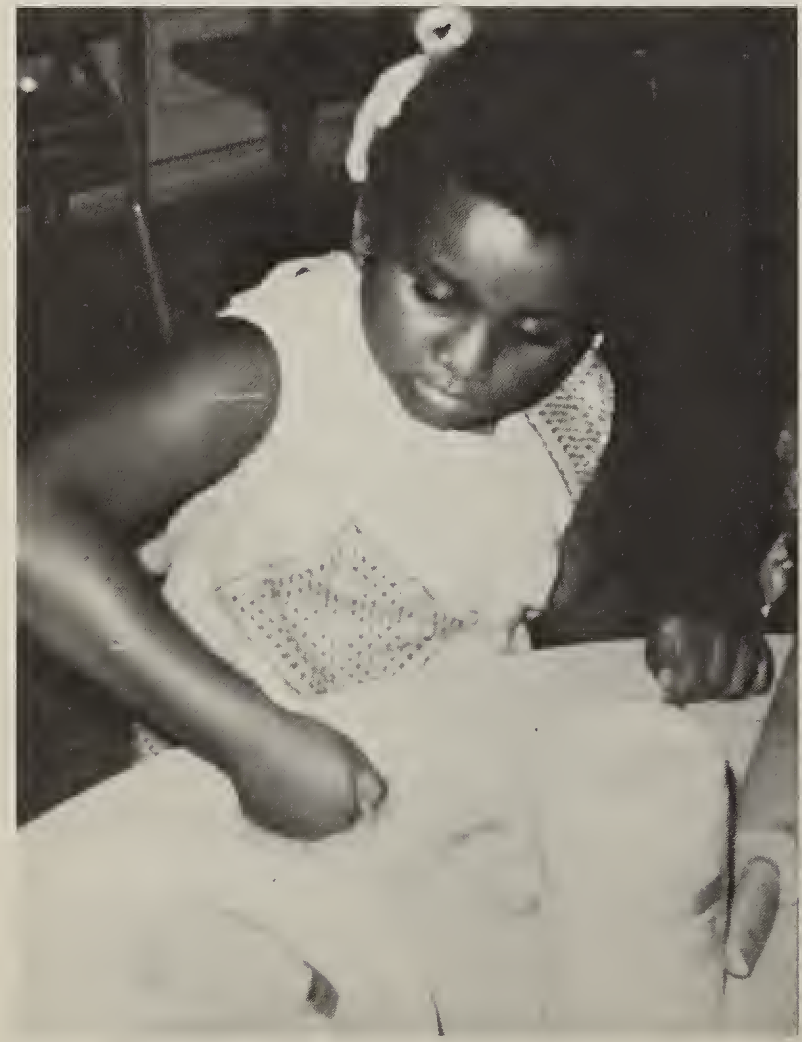
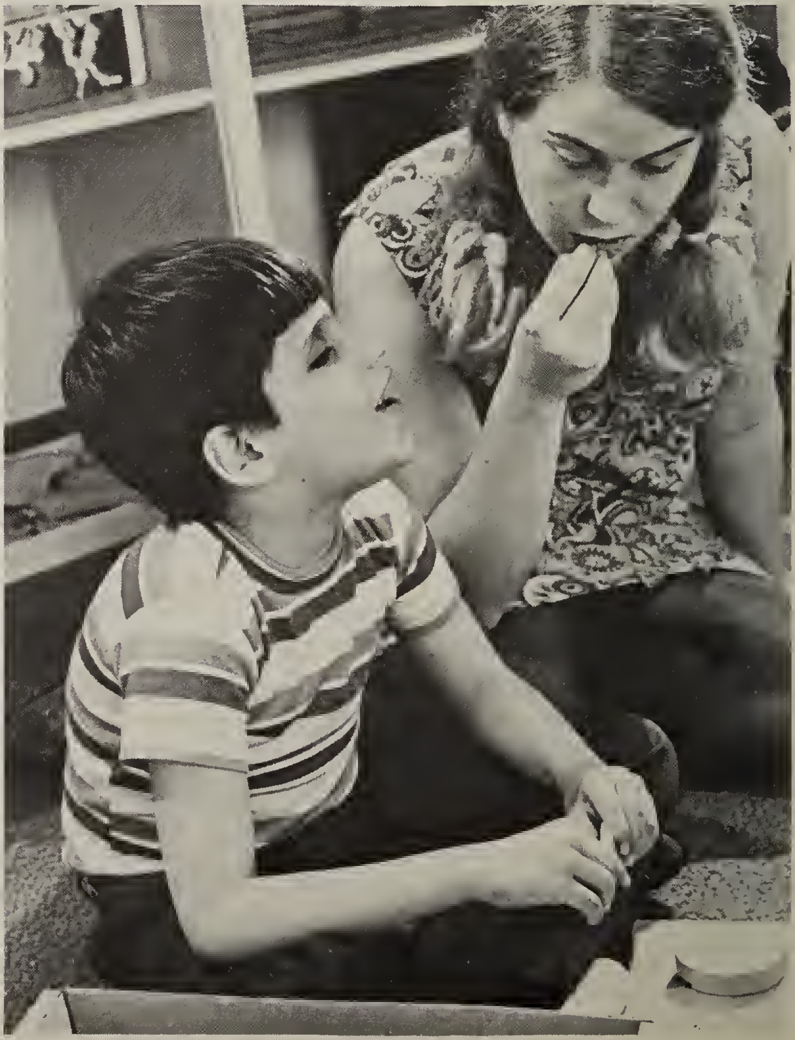


Figure 9. Listening to what a child has to say may be as important as giving him art materials.



ing effect on the children so that they are able to verbalize other affect-laden subjects" (Burlingham, 1972, p. 303).

One day four of the children sat around a table, each working on a different project of his choice, and shared an intense discussion of disabilities—of people who are "out of shape," who are deaf, crippled, or retarded. They recalled when people close to them had been injured or had been seriously ill. They talked of themselves and the danger of other losses. For example, Larry said, "This is very, very important. Everybody listen! This could happen to you guys, too. When you get sick, you know, you could lose your hearing—and see—the time I got my earache I almost got deaf! . . . And something else—if you don't sleep and waken up you'll feel sickly too! You'll get sick—Yeah! I don't think you'll *lose* anything." Larry's eyes had been removed when he was five, and when he later spoke of his father's kidney stone operation during the same session he said, "He still has everything."

Talking About Their Fears

The children shared scary experiences, and even worried aloud about what would happen to themselves, as Larry put it: "Like if I got hit by a car—see, say like if *I die*—say like now, if I *die*." Finally, Terry told of a person she knew who "couldn't hear and couldn't *see* either." I asked the children how they felt about that, and Larry said, "That's one thing I got right now! I can't see! . . . And I'm sad about it." I asked Bill how he felt about it, and, with much blocking and stammering, he explained his attempt at denial. "I don't care. Even if I can't see, I'm—I just don't—I just pretend that—I just pretend—you know." (you just pretend that you really *can* see?) "Yeah, I don't even—I don't like—I don't even let—I don't even *talk* about it. I just pretend it's not even there!" Larry quickly empathized, saying, "That's what I do too! . . . You know what I do at night? Every night when I sleep, I just pretend it's not even there! That's all." The group was relieved, and went on to talk about how sad and angry it made them to be blind, and how badly they wished to see. They also created some of their most beautiful art work during this session.

SUMMARY AND CONCLUSIONS

These blind children were able to utilize the art program to let their feelings go, to move freely and rhythmically, and to experience the pleasure of controlling and creating with materials they could successfully use. They were able to further "let go" and communicate some important feelings, including those that related to their blindness, and especially the anger which was so hard for them to express directly (Figure 8). They were able to be active rather than passive; to master not only the tools and materials, but also some of the unique stresses of their lives.

They were able to do so in part because they were free to choose materials and themes, allowing vital issues to emerge for each one. They were able to express so much in part because of the unstructured media which permitted so many possibilities; and in part because of the symbolic nature of art which facilitates sufficient disguise for psychic safety. They were able to feel free safely because of the supportive structure provided, the "framework for freedom" (Rubin, 1973), which ranged from physical containers for messy media to human containers for messy feelings. Indeed, the non-judgmental acceptance of all thoughts, fantasies and productions (artistic and verbal), was perhaps the most essential condition for the expression of difficult, strong, and scary feelings. As Dorothy Baruch has so eloquently stated, "There should not be the need for children to bury feelings and fantasies that breed troubles when unaired. There should be more earnest and knowledgeable attention, more hearing, more understanding that goes forth at a quiet pace to meet our children's feelings" (1966, p. 31).

Open-Ended Questioning Is Important

It is not easy to always remain non-judgmental; nor is it easy to avoid making responses that subtly direct the child's creations and verbalizations. The skill of listening and hearing, the art of open-ended questioning, which facilitates elaboration and focussing by the child, the ability to truly and fully respect what the child is feeling and thinking are things which must be learned through practice and time. They also require a sincere desire to help the child to explore, articulate, and understand what is inside of him. When what is inside seems to be bursting to emerge, as were the strong feelings of the blind children in this art program, the adult's task is not so much one of eliciting affective expressions, but rather of being receptive and responsive to their emergence (Figure 9).

It is true that we could not give these children the sight they wished to have, but we could help them to enjoy both physical and psychological freedom within the art form; and could help them to gain some *insight* into their feelings and fantasies about blindness. For all human beings, and especially for the handicapped, "art experience can also be a way of performing mentally a desired activity which it is impossible to do physically" (Alkema, 1971, p. 3). If it is true that "man creates, as it were, out of his mortal wounds" (Meerloo, 1968, p. 22), then should not those who have indeed been deprived have available all of our resources (media and selves) so that they may freely and fully come to *be* themselves, both artistically and humanly?

Grateful acknowledgement is expressed to Janet Klineman, Ph.D., educational director of the Lower School, for her support in the exploratory art program (1969-70) and in the subsequent growth of expressive arts at the school. The experiences in that program, including expressions of feeling in and through art, are shown in a film: "We'll Show You What We're Gonna Do!" (ACI Films, Inc., 35 W. 45th St., New York, N.Y. 10036.)

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Rapid Reading in Braille and Large Print: An Examination of McBride's Procedures

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Abstract: *Two groups of braille and one group of large print readers were given two-week workshops to allow them to develop rapid reading skills. All three groups significantly increased their reading rates on both formal and informal tests; there was no corresponding loss in comprehension as measured by the formal test. Younger subjects appeared to make the greatest gains. All three groups more than doubled their informal reading rates, while their formal reading rates increased from 30 to 50 percent.*

▪ Vearl McBride (1974) reported having increased the braille reading speed of adults from 138 words per minute (wpm) to 710 wpm during a two-week workshop. Both braille and large print readers participated in this workshop and some increased their reading speed by as much as 10 or 11 times. Indeed, McBride's claims for increasing the reading speed of the visually handicapped have shocked many reading teachers. One can easily see why when it is realized that the average adult braille reader reads approximately 90 to 110 wpm.

McBride uses only informal testing during his workshops. That is, individuals read fiction material that they would normally read but had not read before. Comprehension is measured by the readers reporting orally on what they read to reach an estimated "book report" comprehension (80 percent or better). He believes that formal tests introduce artificiality to the reading situation and "slow readers down" as they search for the unimportant facts that are asked for in most comprehension questions. Further, McBride has discovered that many comprehension questions on formal tests can be answered without reading the passages; he maintains, they have questionable validity.

REPLICATING McBRIDE'S RESULTS

It was the purpose of the present study to determine the effects of McBride's techniques for teaching rapid reading on the reading rate and comprehension of braille and large print readers using both formal and informal tests. It was of particular interest to compare a group trained by McBride to two trained by one of the researchers (who received her training from McBride). Correlation between rate-gains achieved and variables such as age, sex, years of education, minutes practiced, and level of motivation were also of interest.

Wallace (1973) used McBride's approach to rapid reading with 22 braille- and large print-reading adults. The trainees received six hours of rapid reading training and increased their reading speeds significantly on a formal reading test. Wallace's braille group made an approximate gain in rate of 39 percent, while his large print group made about a 49-percent increase in rate. These formal test results are markedly different from McBride's informal test results. Because Wallace's group received several hours less training than McBride's group, a fair comparison cannot be made.

Eleven female and four male braille readers, ages 19-62 (mean age of 38.6 years), comprised McBride's rapid reading group. These adults came from 12 different states and Canada for a two-week workshop held in Canton, Missouri. They voluntarily enrolled in the workshop and paid their own tuition (for two semester hours of credit) and living expenses. Eight females and four males, ages 10–65 (mean age of 34.2 years), made up the braille group taught by one of the researchers; the second group were large print readers, ages 10–19 (mean age of 13.5 years). There were five males and five females in this group. Both of these latter groups were recruited from the North Dakota State School for the Blind and surrounding communities at no personal cost to any member. This workshop was held in Grand Forks, North Dakota.

All three groups were pre- and post-tested both informally and formally prior to the 16 hours of rapid reading training. Prose fiction which the readers individually chose (no objective measure of comprehension) constituted the informal test, while the *Diagnostic Reading Scales* (Spache, 1963) was used as the formal test.

Workshop Training Procedures

The following is a brief description of the various phases of the training used in both workshops:

1) Convincing readers that improvement is possible.
2) Discussing techniques for increasing reading speed:
   a) faster return sweeps with eyes or hands.
   b) reduction of subvocalization.
   c) increasing visual, auditory, or tactile imagery.
   d) comfortable reading positions.
   e) use of two hands and more fingers (braille readers).
   f) independent movement of hands and less pressure on finger tips.
   g) use of mnemonic devices for facilitating comprehension.
   h) sharing new techniques that individual readers find helpful.

3) Encouraging exploration of new reading patterns: Eye- and hand-movements other than line-by-line and left-to-right, for example, taking in more than a single line vertically, moving down the page instead of across, reading in spirals, zig-zags and other patterns, use of book props, line guides such as fingers or paper, gum-chewing.

4) Gradually breaking "old reading habits" by practicing reading for "speed only" (called "unreading") for no comprehension.

5) Moving into comprehension of disconnected "bits and pieces" (a few words per page) without slowing down.

6) Connecting "bits and pieces" into the thread of the story by several rereadings of the same material at very fast speeds.

7) Continuing to increase comprehension from 50–75 percent comprehension and finally to "book report" (better than 80 percent) the last training session.

8) Each day goals were set for the next day and practice time outside of the training session was recorded.

9) Comprehension throughout the various phases of training was checked by individuals telling each other what they read or being asked by the trainer to share what had been read with the whole group.

10) At each session readers were asked to share with the entire group the specific techniques which had or had not worked for them. Furthermore, they were asked to predict rates at which they expected to be reading at various times throughout the training.

RESULTS COMPARED Significant increases in rate were achieved by all three groups at the .01 level. (All figures have been rounded to the nearest whole number.) The greatest gain in rate was made by the large print group which had an informal pre-test rate of 115 wpm and an informal post-test rate of 334 wpm. The Missouri braille group attained the next highest gain with an informal pre-test rate of 98 wpm and an informal post-test rate of 275 wpm. The informal pre-test rate of the North Dakota braille group was 77 wpm, while the informal post-test rate was 203 wpm. These group rates do not reflect the great range of variation within each group. Pre-test rates varied from 20 to 250 wpm for the Missouri group, from 24 to 163 wpm for the North Dakota braille group, and from 40 to 279 wpm for the North Dakota large print group. Post-test informal rates varied almost as much: Missouri braille group, 100 to 855 wpm; North Dakota braille group, 30 to 477 wpm; North Dakota large print group, 90 to 788 wpm.

The two braille groups showed significant gains in rate (at the .01 level) on the formal test after rapid reading training. The formal pre-test rate of the North Dakota braille group was 79 wpm, and the formal post-test rate was 120 wpm. Thus, the rate gain made by this group was greater than that made by the Missouri braille group, which had a formal pre-test rate of 93 wpm and the formal post-test rate of 121 wpm. Although the formal rate gain made by the large print group was greater than that made by either of the braille groups (formal pre-test, 91 wpm; formal post-test, 146 wpm), it was significant at the .05 level. This might be explained by the greater amount of variation in rate gains made within this group as well as the small number of subjects in the group. The individual range of performance on the formal test for each group was also great. The pre-test range for the Missouri group was from 30 to 259 wpm; the North Dakota braille group had pre-test rates ranging from 24 to 157 wpm; the North Dakota large print group had a variation from 43 to 160 wpm. On the post-test of formal rate, the three groups showed the following extremes of performance: Missouri braille group from 30 to 338 wpm; the North Dakota braille group from 21 to 228 wpm; the North Dakota large print group from 43 to 318 wpm.

Comprehension Varied Only Slightly

No significant change in comprehension, measured formally, took place for either of the two braille groups after rapid reading training. The Missouri braille group had a slight decrease in comprehension from a pre-test score of 89 percent to a post-test score of 86 percent. The North Dakota braille group had a pre-test comprehension score of 83 percent and showed an increase with a post-test score of 86 percent. The large print group had the lowest pre-test comprehension of the three groups (75 percent) and improved to 87 percent on the post-test; this gain was significant at the .05 level. Further analysis of this gain using covariance techniques (pre-tests as covariates) shed doubt on this result. It was likely the low pre-test score of the large print group which made its gain significant. Pre- and post-test comprehension scores again showed a great deal of variation within each of the three groups. The Missouri braille group had one individual decrease as much as 33 percent in comprehension after training, while another achieved a comprehension gain of 19 percent. The North Dakota braille group had one subject who decreased in comprehension as much as 15 percent and one who increased as much as 50 percent after the training. The North Dakota large print group's greatest individual loss in comprehension was 36 percent, while its greatest gain was 78 percent.

FORMAL vs. INFORMAL TESTING No significant difference was found between the informal and formal pre-test measures of rate for any of the three groups. A significant difference at the .001 level was found between the informal and formal post-tests of rate for the large print group, while the two braille groups showed differences between these measures at the .01 level. Since there were no significant differences between the informal and formal pre-test rates, one might conclude that the training altered this similarity by the time of the post-tests. It is possible that the substantially greater rates on the informal post-test were achieved because of lower comprehension levels. In an attempt to read faster, readers may not have been truly

"... McBride's rapid reading techniques are not magical; they will not bring every reader equal success. In fact, some might say that the techniques are just rules of 'common sense.'"

reaching the estimated "book report" level of 80 percent comprehension. Another explanation for the discrepancy between post-test measures of rate might be that each test evoked a different kind of reading. The rapid reading training may have, in fact, taught individuals to suppress the unimportant words on a page as their eyes or fingers passed over them. While the informal testing may have enhanced this kind of reading, it is logical to assume that the formal test situation might diminish this ability by causing readers to "search" for possible test items.

No significant differences were found between informal rates predicted and informal rates achieved after rapid reading training for any of the three groups. Either comprehension was being sacrificed for the sake of fulfilling a prophecy, or the prediction of rates provided the necessary motivation for achievement of these rates.

It is interesting to note that despite differences in age, years of education, motivation for participating in the training, and amount of practice time, no significant differences were found among the groups on pre-test rate (formal or informal), post-test rate (formal or informal), pre- or post-test comprehension, or percentage increases in rate (formal or informal). In reference to the amount of practice, the Missouri braille group (with a mean practice time of 1,645 minutes) far exceeded the North Dakota braille group (303 minutes) and the large print group (249 minutes). This is logical, since the rapid reading training at the Missouri workshop was the only activity in which readers were engaged during that two-week period; furthermore, they were receiving college credit for their efforts. The two North Dakota groups were recruited to participate in the training (in addition to their school routine or jobs) and for no school credit.

EFFECTS OF READER'S AGE

Age was significantly-positively correlated to pre-test formal comprehension, but was not significantly related to post-test comprehension. Thus, the older readers initially had greater comprehension; the rapid reading training may have had an "equalizing effect" among readers on comprehension level. Age was significantly-negatively correlated to informal and formal rate increases ($p<.05$). It might be concluded that rapid reading training has its greatest impact on readers who have had less time to establish their reading habits.

Significant positive correlations ($p<.01$) between pre- and post-test (formal and informal) indicated that the faster readers before training were also faster readers after training. It is interesting to note, however, that informal and formal rate increases were not significantly related to initial reading rates.

The lack of significant correlations between the variable of sex and measures of rate or comprehension indicates that males and females were similar in their initial reading skills and benefitted to the same degree from rapid reading training.

Comparing the two braille groups, pre- and post-tests of rate were significantly-positively related to years of braille reading experience (informal tests $p<.05$, formal tests $p<.01$). On the other hand, years of experience with print was negatively related to pre- and post-tests of rate (informal $p<.05$, formal $p<.01$). One might postulate that knowledge of the print symbol interferes with the tactual perception involved in the braille reading process; a braille reader with knowledge of print must produce a single response from two very different stimuli.

The use of more than one finger in the braille reading process was positively correlated with an increase in rate on the formal test ($p<.05$). It was beyond the scope of this study to determine the effectiveness of specific finger combinations.

It was found in this study that braille and large print readers can significantly increase their reading rates after 16 hours of rapid reading training (as described by McBride) without significant change in comprehension. Individuals read significantly faster on an informal test (no objective measure of comprehension) than on a formal test. The three groups involved in this study differed significantly in age, years of education, motivation for taking the training, and especially in the amount of accompanying practice. Despite these differences, the groups did not significantly differ in their rate increases or changes in comprehension after the training. Rate increases were achieved by readers regardless of their reading rate prior to the training. Reading braille with more than one finger was, however, significantly related to rate gain. Age was a significantly negative influence on rate improvement for both braille and large print readers. Braille readers with several years of print-reading experience in the past were at a significant disadvantage in achieving rate gains as well.

IMPLICATIONS OF RESULTS

Although rate increases were fairly constant among the groups in this study, this was not true for individuals. A number of workshop participants expressed disappointment in the reading rates they personnally achieved. Some placed the blame on their own personal failure to "catch on" to the techniques; others felt that the training simply did not do what McBride claimed that it would. Perhaps the claims for McBride's rapid reading training ought to emphasize the numerous factors contributing to an individual's success as heavily as they now emphasize what has been possible for some readers. Not only will one's sensory abilities and intellectual capacity have some effect on how rapidly he picks up reading speed, but one's personality and general approach to "unconventional ways of doing things" will have a profound effect. One of the steps of the training involves reading for no comprehension; several of the older individuals found this extremely difficult to accomplish. It seemed a waste of their time, since they had always been very precise, careful readers. "Going through the motions" is far different than truly internalizing a new way of doing things.

Even though this study shows that slow and fast readers received equal benefit from the rapid reading training, the faster readers were more successful at implementing "unconventional" ways of encountering words. The method used by the two fastest readers in the braille groups actually involved reading backwards over half of a line with the left hand in order to pick up extra information, while waiting for the right hand to drop down and begin a new line. One might hypothesize that a minimum speed must be obtained before incoming information can be interpreted "out of sequence." Readers who are still attempting to discern the geometry of the braille cell or print symbol are probably hampered in their application of rapid reading techniques. For these readers, a two-week workshop is not long enough to make tremendous rate gains. Two weeks may also not be long enough for those readers attempting to sensitize fingers never before used in braille reading. Several workshop participants reported feeling a few symbols with fingers they had not previously used for reading; however, few accomplished any real degree of efficiency with those new fingers.

Effects of Rapid Reading on Individuals

Rapid reading seems to affect people differently. The rapid eye and hand movements employed through the training were fatiguing to some readers. Others found such movements useful for "releasing tension." It should also be recognized that not everyone will want to employ "rapid reading" in every situation. This might be especially true for readers who wish to savor an author's style. By the same token, allowing for reflection of ideas might make subvocalization a desirable activity.

From this study we concluded that age had a negative effect on one's chances to increase his reading rate. It is obvious, then, that we should concentrate our training efforts on young children who have not yet established their reading habits. Perhaps we might experiment with teaching rapid eye and hand movements prior to learning the decoding of print or braille symbols, thus making reading a dynamic process rather than a static one.

The use of more than one finger in braille reading was a positive factor in raising one's rate of reading in this study. Beginning braille instruction should perhaps place greater emphasis on the use of more than one finger and independent movement of the hands to enhance reading rate. Specific attention should be given to ways of overcoming the possible interference of visual symbols for braille readers who formerly read print.

It is obvious that more research needs to be done regarding the efficacy of rapid reading training. The informal testing, routinely used by McBride, is impossible to reproduce in any exact fashion. The prose fiction read for training purposes, as well as for testing, differs a great deal in format, ease of reading, and appeal to the individual reader. Furthermore, one reader's definition of "book report" comprehension may differ considerably from another's. Despite the difficulties inherent in using formal tests, they will continue to be more useful for research, especially in the comparison of individuals or groups. There is a great need to work on making formal tests that are both valid and geared to the reader's interests.

AREAS OF FURTHER RESEARCH Further research should focus on such elements as practice time, motivation, and retention of gains in rate over intervals of time. Because practice time did not appear to affect rate improvements in this study, braille and large print readers should be divided into groups on the basis of their practice time and monitored as to the kind of practice they are employing. The role that motivation plays might be studied by comparing rate improvements made by readers receiving McBride's training to readers who simply are rewarded for "reading faster." Finally, readers receiving McBride's rapid reading training should be re-tested for rate and comprehension several months after termination of the training.

In conclusion, McBride's rapid reading techniques are not magical; they will not bring every reader equal success. In fact, some might say that the techniques are just rules of "common sense." While this may be true, most of us in education need someone to embody that common sense for us and make it a teaching approach. Although carefully controlled studies are still needed to evaluate the exact processes involved for reading braille or large print, it is important that we remain open-minded about rapid reading techniques. It is time for us all to stop accepting the fact that braille and large print reading is "inherently slow."

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Bank Statements in Braille

A new and faster technique for producing bank statements in braille has been developed by the Warwick Research Unit for the Blind, Coventry, England. It has been devised by Dr. John Gill, a research fellow at Warwick University, in cooperation with Lloyds Bank of London.

Blind bank customers will now be able to receive regular statements in braille, at no extra charge, in only a day or so longer than the normal service for sighted customers. Braille statements have been available on request from some banks for many years, but have taken so long to produce that the value of the information has been reduced.

Under the new system, magnetic tape data supplied by the bank is input to a computer at the university and a linked braille printer embosses the batch of statements within minutes. At the same time, the line-printer produces a print copy so that the blind customer can discuss the statement with his local branch.

"This development is a contribution towards helping blind people who read braille lead a normal life," says Dr. Gill. "It is easy to forget that many blind people have to depend upon sighted persons reading their financial papers to them. Prompt bank statements in braille will reduce their dependence on others and give them direct and speedier access to their own financial affairs. It is good to think that we have achieved this in Louis Braille Year, which is marking the 150th anniversary of the braille alphabet."

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Integrating the Aging Visually Handicapped Into Community Groups in New York City

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Abstract: *Reports the results of a three-year funded project to integrate aging visually handicapped persons into community senior programs in three neighborhoods in New York City. Describes the project's structure, how groups are organized, site selection, the orientation of host center staff and members, activities, and transportation. A special program in an area nursing home is also described.*

▪ In 1972, the New York Community Trust accepted a proposal submitted by Vacations and Community Services for the Blind (VCB) and provided a three-year grant to carry out the proposal's purpose: "to provide carefully structured opportunities for blind and visually impaired persons to participate fully with sighted senior citizens in social, recreational, and community service activities" in three communities, East New York, the North Bronx, and Williamsburg.

Cooperation of community centers in these communities was secured after some initial difficulty and groups of blind older adults were started at the Pink Houses Community Center (East New York), the Mosholu-Montefiore YM-YWHA (North Bronx), and the YM-YWHA of Williamsburg (Brooklyn).

In two of these centers, the program's acceptance was delayed by fear on the part of the agency authorities that hazards would be added to the operation of these centers such as insurance problems, discomfort (and possible loss) of old-time members, dangers for blind people inherent in the ways the buildings were laid out, etc. Underlying these fears was the unexpected personal discomfort of staff and board members in dealing with the blind.

Discomfort and uncertainty at the reception that might be given them affected blind members as well. As a means of dealing with the problem of overcrowded facilities, another agency, years earlier, had attempted to integrate blind and sighted people by referring blind people to community centers. This effort had not succeeded. Word about this failure had spread to blind people around the city; their suspicious attitude about efforts that seemed similar was therefore understandable.

INTEGRATION IS RESISTED BY SOME

As stated in the proposal: "It would be naive to assume that the people who will make use of this service will all initially express an eager desire to become more involved with the sighted community. On the contrary, there will be strong resistance by some and total resistance by a few." The minority status generally given to blind people fosters in many of the latter the desire to withdraw from contacts with the sighted. One also finds a type of reverse prejudice resulting; e.g. "they don't want us, so why should we be made fools of."

Letters were sent to elderly blind persons known to the agency from its Vacation Camp for the Blind. Contributing to the initial positive response from some was their long-term association with the agency. For others, various excuses put off the decision to join. When it became evident that the group would continue, that a staff member would be assigned and would continue with the group, and that the experience of those already participating was positive, the groups filled up.

Other factors undoubtedly contributed to members' decisions to join. For example, the initial proposal stated: "Many blind people live alone as does much of the city's aged population. The group will initially provide relief from the isolation that is so prevalent." The problem of loneliness is widespread among the elderly blind and must be considered in assessing the success of a group. Much significance attaches to "getting out of the house" as an antidote to loneliness.

A blind person described this problem as follows: "when one becomes afflicted with the loss of sight, it's a chronic condition; your friends become tired of coming over to see you. As a matter of fact, they walk away from you. You end up all alone. That's the time a person requires a little encouragement from the outside. —A little encouragement not to withdraw into himself, not to hide away from the world. That's the worst thing you can do—shut yourself away in the house and refuse to go out as usual. We feel that life is over. But life is *not* over." And so, the availability of the group, of companionship, of people with whom to talk and with whom to do things becomes important in and of itself.

VCB assigned workers to the three groups and orientation programs were developed for the staffs of the host centers and their senior citizen members. VCB's supervisory staff participated in these sessions which included a slide presentation demonstrating the varied interests and capabilities of blind people. Blind people were shown pursuing "people's" interests. The presentations highlighted similarities and showed the differences in perspective.

Blind group members also participated in some of these presentations and then answered questions which usually revealed the surprise and doubts of the questioners about blind people's abilities. Eventually, blind group members were organized into "speakers' bureaus" to make presentations before other community groups.

VCB Groups Were Supportive

The host agency's schedule of programs was read regularly to members of the VCB groups. As members evinced an interest in announced activities, they were encouraged by the leader to move out to the activity with the assistance of volunteers and to return to the group when they wished. Thus the VCB group continued to provide assured acceptance to its members while the latter tested themselves in the sighted settings. Eventually, some members developed associations with sighted contacts and found that they were at ease in either setting.

Some members, for reasons deeper than blindness, found themselves unable to make the move out of the VCB group. Yet, when opportunities arose for the entire VCB group to participate with other senior citizens in the hot luncheon program or in the monthly "birthday party" celebrations sponsored by all the centers, for example, they too shared in the enjoyment of these occasions.

MOVE TO NEW GROUPS In two instances, when it developed that the program of the host agency offered inadequate opportunities for integrated activities (i.e., not enough variety in the program), members of the group and the VCB staff member canvassed other possible locations in the area, and the groups moved to new centers.

Though fairly recent, the new locations have proved stimulating to the groups and have moved them ahead substantially. In one of these centers, a blind member is now a member of the Center's executive committee; members of the group are attending the centers on days other than when VCB is present; blind members have made presentations to a number of community groups. A local blind person, previously unknown to the agency, is a new group member. Sighted center members receive VCB members warmly. The center serves hot lunches and group members are able to take advantage of this service. Arrangements are being made for members to continue attending the center during the summer when the VCB program is suspended. A New York University student has been assigned to the group by her college for fieldwork credit and she is assisting the VCB worker.

For the second of these groups, the move to a new center has also yielded very positive results. Members take advantage of the hot lunch program; one of the members has joined a center band; other VCB members entertain at center events; at dances, blind and sighted are dancing partners; a group member has had her poems printed in the center newspaper; social service problems of blind members have, in some instances, been handled by the center social worker, just like for other center members; occasionally, some members use the center on days other than when the VCB worker is present, particularly to attend the monthly birthday parties conducted by the center.

The latter group has been meeting in alternate weeks at a nursing home where resident and non-resident group members have become a close-knit group. Contacts between them are maintained by phone outside meeting times.

VARIETY OF JOINT PROGRAMS Typical joint programs have included discussions, newspaper readings, exercises, crafts, group singing, and dancing. One of the group members plays the piano for group singing in which members of the hospital staff often join. Several nurses come in to dance with members. An aide sings for the group. A doctor and a nurse sometimes come in to play the piano for the group.

Of particular interest is the effect that this program has had upon the Home, where interest has developed and grown for the provision of programs for the Home as a whole. It is also worth noting that seeing blind members in a healthy, involving situation seems to have had a salutory effect upon relationships between the staff of the Home and blind residents. No longer are the "safety" standards applied as rigidly as before when blind patients were kept immobilized in wheelchairs for non-medical reasons.

Another dimension to the Home experience is the opportunity it has provided for the non-resident blind members to give themselves meaningfully to others. One VCB member put it thus: "I used to feel so sorry for myself when I lost my sight. But now I realize that people in the Home are much worse off than me. They are so eager to have us come that it makes me feel good."

In both of the above settings, other community agencies have been referring blind persons for membership in the VCB groups. Community agencies have also used the VCB workers as resources for situations involving visual problems. Host agencies have been making schedule changes in their own programs to make it possible for blind VCB members to participate.

The third group, which meets in a Bronx center, has found it a particularly receptive setting. The host agency considers the VCB program as an integral part of its service to the community. The group is at capacity membership level and has a sizable waiting list. Attendance is consistently high. An adequate number of volunteers assist the group, one of whom leads some activities. Social work students help with arts and crafts activity, with discussions, and with resolution of concrete problems such as social security, medicare, medicaid, etc.

Two group members are representatives to the host agency's Nine Club Council of senior citizens. The council meets monthly on a day other than the VCB group's day and is regularly attended by the group's representatives.

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The latter make regular reports to their group and accept group recommendations for presentation to the council. The Red Cross provides transportation to council meetings and to monthly meetings of the Center's Cultural Committee which has two other group representatives.

SUMMER PROGRAM The group has presented educational and entertainment programs at meetings of the center's senior citizens. During the summer of 1974, the center provided a part-time staff person and funds for transportation so that the group could continue when VCB suspended its community program for the summer period. The center has also provided an arts and crafts specialist to work with group on a regular basis. On its own initiative, the center has prepared a proposal applying for transportation funds so that blind group members could attend the center on an additional day. On such a day, blind members would not meet as a group but would join various center activities as individuals. It is unlikely that such a possibility would have been considered, but for the security built up over the three-year period during which members have been meeting there with a VCB worker.

The progress achieved in this center points directions in which all VCB groups may eventually move. It can be seen, however, that the attitude of the host agency is vital to the goals of the program. The agency's readiness to help create a climate for progress is most evident in this center. Accepting the fact that blind persons should be included in the community population for whom the center makes its plans and establishes its program, sets the stage for the ultimate integration VCB is seeking.

"Open House" Programs

All of the groups plan "Open House" programs. Invitations are sent to local community leaders. Guests are informed about blindness and about the ability of blind people to overcome aspects of their handicaps. Tables display products blind members have made, such as knitted and sewn items, tile work, sculpture, etc. Aids and appliances that help blind people in daily living tasks are displayed and demonstrated. Baked and cooked items made by members of the groups are used as refreshments. A carousel projector shows slides of VCB group activities. Group members act as "greeters," demonstrators, speakers, and masters of ceremonies.

The "Open House" programs represent a move toward involving local community leadership in the problem of integrating the blind and sighted in their communities. Staff workers have begun to use some of their time to visit other agencies and coordinate groups, leaders in the community, and service and fraternal groups to talk about the group and the goals of VCB. A slide presentation is shown to groups which depicts activities of blind people in the community centers and in camp. The agency's goal of gaining acceptance for blind people in community groups and institutions is stresssed as is the need for volunteers to assist in the program.

ELEMENTS FOR SUCCESS The first three years of the groups as described above have demonstrated that it is indeed possible for blind people to join in activities with the sighted, that progress can be made in overcoming many of the initial barriers to mutual acceptance of each other. Creating the appropriate climate appears to be a major consideration and, in this task, a number of elements appear to be necessary. Among these elements is the existence of a desire on the part of the host agency to do more than to discharge an "obligation," i.e., to regard the problem as theirs, as well as that of the blind service agency. The availability of program activities into which blind people can fit, i.e., a varied program to allow for varied interests, is also necessary. It is helpful to set aside time in the early stages of the relationship for orientation to staff and to sighted center members.

Opportunities for joint activity between blind and sighted members should involve occasions when the sighted are included in activities originated by the group of blind people. Members of the blind group should be involved in shaping the program, in developing the "open house" activity, in taking leadership in carrying it out and in making joint appearances with the VCB worker before center membership groups and before community groups.

It is understood that some of the criteria noted above require work before they can be realized. In other cases, however, if the setting initially selected for the group does not meet some of the requirements stated above, the group should be prepared to seek and move to another community setting. If there is a relatively limited program, for example, joint activity is less possible.

Joint activity, as has been stated, can be achieved. "Integration," however, is a longer-term task and no claim can be made for its having been achieved as yet in the three centers mentioned. Part of the explanation for this lies in the community patterns that pertain to the blind and in the social constructs that seem to be part of the present culture.

Our belief, however, is strengthened, that blind persons ought to be and can be integrated with the sighted. Meeting the needs of blind persons who are members of a community should be part of total planning by the community. An adequate pattern of community services, in our view, should provide that blind persons are not excluded from services available to others on a non-specialized basis. While there continues to be an important role for the specialized agency, services open to the community in general ought also to be available to blind persons. We will continue our work toward these goals.

Patients' Expectations in a Residential Rehabilitation Center

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Abstract: *Blind persons entering a rehabilitation center have a variety of unexpressed or unacknowledged expectations. They may, for example, view it as a source of blind skills and adjustment training, an extended family, the Land of Oz, a place of blind certification, a sanctuary, a crystal ball, a hospital, a resort, a purgatory, or an optical and electronic aids supermarket. While expectations and needs may change during the course of rehabilitation, it is suggested that therapists nevertheless be especially sensitive to their patients' expressed desires and deal with them in a constructive manner within the program's resources. It is recommended that centers consider broadening the scope of activities within the limits of their philosophy and capabilities so that their efforts will fulfill more realistic and positive expectations and therefore produce a greater degree of patient satisfaction.*

■ When asked directly their reasons for applying to a rehabilitation center, newly admitted blind patients or clients respond with a variety of answers. More varied still, however, are the many unnamed purposes and expectations which are unexpressed either because they are often difficult to communicate to a relative stranger in an interview or they have not reached a sufficient level of consciousness so that the individual can verbalize them. Many of these unvoiced expectations are realistic and can be fulfilled, while others are the product of fantasy or misinformation and, if pursued, can be the source of much disappointment and frustration.

We feel that it would be useful to catalog and label the more common of these expectations. Patient satisfaction should be a prime concern of a rehabilitation agency and varying patient needs and anticipations should be recognized and addressed. Patient expectations are not mutually exclusive and their emphasis, as well as their presence or absence, can change with time. While we have attempted to give some of them colorful labels, this should not be taken to mean that we minimize their importance for a particular patient or belittle the person who holds them. Throughout, the patient is referred to in the masculine gender, but this is not done in a chauvinistic sense, nor does it imply that these expectations are held more by men than by women.

SOURCE OF TRAINING The residential center is expected to be a source of blind skills and adjustment training. This expectation is possibly the most widely held by patients and certainly the one that is ingrained in the thinking of a center's staff and administration. Ideally the center is seen as a school in which the skills necessary to compensate for many of the losses due to blindness are taught. Accordingly, when "replacement" reaches certain limits, "adjustment" or an increase in the probability of adjustment is felt to occur.

Centers have become increasingly sophisticated in recognizing that adjustment is not merely a balancing of personal assets and debits, but also frequently involves a total change in an individual's orientation toward and expectations from life. In many settings, therefore, social and psychological services have been added. However, the "replacement" concept is heavily emphasized and a patient whose primary expectation is instruction in traditiontal blind skills when entering a residential center is usually satisfied.

Extended Family

Quite often patients expect that the residential center will be an extended family for them and look to it for ties of a kinship nature, both in their relationships with fellow patients and with staff members. Brother-like relationships between blind clients have persisted well beyond their leaving the center. Often a patient will express feelings of dissatisfaction with the "program" and consider discharge regardless of his own progress when a close sibling surrogate leaves and he must remain to complete his training. A widowed female patient remarked that she had found her last husband at a blind center and then proceeded to become engaged during her current program of training.

While the relationships between patients and staff members are more structured and generally more formal, they possess many attributes of "family." Caring, acceptance, and concern are features of the rehabilitation therapists' role and stand in contrast to the indifference, prejudice, or

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pity frequently found in the general public. Perhaps patients perceive the center as offering the possibility of this attitude in their initial encounters with a social worker who plays a similar role, regarding this individual as a prototype of the as yet unmet staff members of the rehabilitation center. Patients, too, may seek out an organization with a bureaucratic structure resembling a family-like arrangement to "play out" some of their transference needs, i.e., interaction with a dominating "father figure," a protective mother, etc., with people who have some commitment to remain involved with them.

LAND OF OZ Some patients seek the Land of Oz and will look to the center as did the heroine and heroes of Frank Baum's saga as a place where their fondest wishes can be realized and their disabilities corrected. The most obvious fantasy is, of course, the restoration of sight. Even relatively sophisticated patients have emphasized their desire for an experimental operation reported in the popular press or have sought exercises which would improve their acuity or expand their field of vision. Other individuals will seek a way to enhance their hearing or develop some of the Duncan Maclain or Longstreet supernatural skills which the folklore of blindness deems possible. Some patients will hope for an almost Pygmalion transformation where they can be changed into the embodiment of their lifelong ideals. The residential center is seen as the open door to these possibilities since it professes expertise in the general field of blindness and should, therefore, know how to perform these miracles.

At times it appears that the learning of skills is quite secondary or even incidental, while the idea that he will be stamped or labeled as a "blind person" by his having been at the center is of central concern to the patient. This, accordingly, brings certain rights and establishes an identity with both individuals and agencies. The certification sought may be either positive, i.e., certification as an adequate blind individual who is capable of living in and coping with a sighted world, or negative, i.e., certification as a helpless blind individual who is not expected to achieve average functional levels and may be permitted permanently to indulge in the sick role. Needless to say, his choice depends upon a host of variables including personality, physical state, living conditions, and personal prejudices about blindness. Certification may be either "official," i.e., the staff confers it by its actions or responses to him, or "unofficial," i.e., he certifies himself by his own evaluation of his accomplishments. Such certification is frequently used by an individual who has some degree of sight as a quick way to legitimize his access to any benefits accorded a member of the blind world. Moreover, patients losing vision will often request a great deal of blindfold training rather than wanting to use their remaining sight in order to "pre-certify" themselves. Frequently patients who have official certification as a prominent expectation will feel disappointed if the center does not present them with some type of official diploma when they leave. Occasionally patients whose skills are well developed prior to coming to a center will want to attend for this purpose or to return for periodic "recertification."

The Center as a Sanctuary

On occasion patients come to the center for sanctuary because of a desire to leave an unhappy situation rather than because of its positive offerings. It is seen as a "time out" or haven from the distresses of employment, family, or the sighted world in general. One is freed from immediate pressures and there is always the hope that such problems will change while one is away from them. Patients who look to the center to fulfill this function may often leave abruptly when there are indications of improvement at home, regardless of their personal progress. In a more subtle manner they may attempt to control their stay by either learning quickly or slowly, being cautious in the latter situation not to be discharged prematurely as a person with minimal potential.

Some patients with residual vision will arrive at the center almost expecting, as it were, to look into the future to view what life would be like should their vision deteriorate further. This goal could be either counter-phobic or more realistically motivated. It could be seen as a method of self-desensitization and even may develop into a desire to obtain certification as a totally blind person before this state actually occurs. While our studies have shown that blindfold training has many positive attributes, such patients may insist upon it at the expense of their learning to utilize their remaining vision in an efficient manner.

The Center as a Hospital

One of the more obvious expectations patients have is that the rehabilitation center will take care of their medical and psychological needs. Often patients are found to have symptoms unreported on their admission forms. While this might reflect an inadequate pre-admission medical examination or the stress caused by activity at the center, patients can acknowledge aspects of illness which would not be serious enough to initiate medical action by itself, or express psychological symptoms to persons who can deal with them without specific referral to a psychiatrist. The patient while at a center is frequently seen by a general practitioner or by specialists from an associated medical school. Psychotherapy may be available as a substantive part of the program and patients can talk about difficulties other than their blindness. Medication can be re-evaluated and brought up to date. In this manner the client can effectively deal with a physical or psychological problem without directly labeling it as his major difficulty which is, almost always, assumed to be his visual loss.

OMBUDSMAN'S SHOP Patients often see the center as a place to recruit a patron, champion, or ombudsman to assist them in their differences with individuals or agencies. This could range from help with legal matters to obtaining benefits, or supporting the patient in a dispute with his family. The party with whom the patient attempts to ally himself is usually a person who has influence outside of the center by virtue of his position or title, and may include specifically the social worker, physician, psychologist, or the center's administrator. At times patients are limited in this endeavor by the rehabilitation philosophy of promoting independence and initiative and, as a result, help of this type may be discouraged. However, when patients battle bureaucratic giants or insensitive agencies and seem to be losing, often they can find this type of assistance from the staff.

Attending the center can be regarded as collecting what is owed the client because of his blindness. It is the coin with which he is paid for his disability. Often the material facets of the program, such as living accommodations, meals, entertainment, etc., are felt to be of prime importance and the position of the patient as receiver is emphasized. This attitude may interfere with those other aspects of the program in which rehabilitation is viewed as an active, working process in which the client must make an effort in order to take advantage of what is offered.

Instead of fleeing on his own from the circumstances outside the institution, a blind individual may be coerced into seeking admission by relatives or others who wish, at least for the present, to be rid of him. To him, the center is seen as a place where he is deposited or stored until other plans materialize or he is forced out at the completion of training. Here he feels "on ice" until living quarters are found, domiciliaries have openings, other relatives are located, a shop has need of an employee, school starts, or "something happens." This may be the latent content of a message given to a patient by a referring agency that wishes to avoid dealing with him. The patient may know indirectly that this by itself may not be considered an acceptable reason for admission and so, in compliance with the referrer's suggestion, he may express another purpose for wanting to attend the center.

THE CENTER AS A RESORT Social activities are an important aspect of a residential center both to alleviate the loneliness that is a consequence of being away from home and family and as a vehicle to learn and practice certain skills. These include dinners, dances, participation and spectator sports, etc., and their utility in the rehabilitation process is well established. However, it appears that for some patients this is an inordinately important reason in their request for training and they therefore see the center as a resort. Often the older blind person, especially, is faced with the problem of having a great deal of time but little to do, often because of transportation difficulties, lack of sighted help, or the expense of the activity itself. The residential center with its interface with the community is in a much better position to provide these activities than is the individual client himself.

The center seen as a purgatory is sometimes enhanced through well-intentioned state and federal policy which advises that preliminary adjustment training should be obtained before vocational rehabilitation can be started. Accordingly, it is a program which is seen, especially by persons unacquainted with the positive results of blind skill training, as a period to be "suffered through" before one is considered "worthy" to receive funds or the tools needed to compete in the sighted world. Although grades are not given, it is often seen as a test in many senses of the word. The concept of the center as a purgatory may also exist in the mind of the individual who considers blindness the result of some type of "sin." Accordingly, this patient may view suffering through the center as a way of making some type of restitution for misdeeds or alleviating any guilt which he feels might be linked with the onset of a visual impairment.

Optical and Electronic Aids Supermarket

In recent years, technology has made itself felt in the field of blind rehabilitation. Clients are very much aware of this but often feel, at times justifiably so, that they are not aware of all the specific new devices which are becoming available and are not in a position to purchase on a private basis either the instrument or the training to use it. The center is seen as a place to remedy this, i.e., an optical and electronic aid supermarket. Also, there is usually the assurance, if the device is utilized within the center, that its development has reached a stage where it has promise or has achieved some degree of utility. The product has, to some degree, been consumer-tested and the individual can assume that the time he invests in his training will probably not be wasted.

While the above expectations seem to merit most attention, other patient expectations include the residential center as a job training school, placement bureau, information repository, or even a limbo. Possibly the list could be extended endlessly as each individual has his own needs and fantasies, and expectations can be unique as well as unlimited in number within the same individual. It should also be noted that other disability groups have some of the same expectations when they enter an institution or seek therapeutic aid (Braginsky et al., 1969; Kopp, 1970) and that other residential institutions serve many of the same purposes as do blind centers (Goffman, 1961).

EXPECTATIONS OFTEN CHANGE While it is felt that the expectations which bring a patient to a center may not conform to the official goal of that institution, they should be given consideration. The center should be flexible enough to acknowledge them or to help achieve them if the expectations are positive and logistically feasible. Too, as noted earlier, expectations often change while a patient is attending the program and unrealistic expectations may disappear as he undergoes adjustment training. For example, a person may look upon the center when he first arrives as a Land of Oz where he might regain his sight, as providing an extended family with a caring "father figure," and as a placement bureau which will find him a job after he is restored to "wholeness." As he becomes immersed in the rehabilitation process, he will, it is hoped, look to the center as providing compensatory skills rather than the "miracle," and learn to satisfy his dependencies in a more realistic manner. He might then consider enrolling in some type of educational training program or modify his previous abilities so that he could eventually find meaningful work experiences when he leaves the program.

If it appears that an individual doggedly looks to the center to fulfill a need which is unrealistic in view of either

(Continued on page 406.)

Programs for Blind Diabetic Clients at a Rehabilitation Center

MARIE S. WILLIAMS, ACSW
Ms. Williams is supervisor of social services at the Minneapolis Society for the Blind.

Abstract: *A workable diabetic program has been developed over the past three years in response to individual needs of blind diabetic clients at the Minneapolis Society for the Blind's Rehabilitation Center. Among the components of this program are ongoing cooperation with local diabetes groups, the services of a nurse-consultant, the use of a diabetic profile sheet, development of housing and medical resources and of teaching kits for insulin measurement and urine testing, and specific program accommodations for the diabetic. Special stress is placed on the idea of diabetes as a primary speciality, along with blindness, with commensurate education of staff in the area of diabetes. Accommodation to each diabetic as a separate and unique individual with separate and unique symptoms, control measures, and needs is seen as a critical necessity.*

■ Diabetic program? We didn't know we had one. What we had at Minneapolis Society for the Blind was a rehabilitation program in which 49.1 percent of the clients happened to be diabetic—including some extremely severe cases. Over the past three years, the percentage of diabetics had increased sharply, and the degree of severity had increased. Referral by referral, we accommodated to the needs of the people who wanted our services. Every aspect of our current program was set up gradually in response to the immediate and specific needs of particular clients and was never actually planned as a separate "program." But somehow, over those years, and because of the needs of those individual clients, it seems upon examination that we did arrive at a quite complex and rather comprehensive system for diabetics, and one that appears to be working remarkably well.

When, three years ago, diabetics made up 36 percent of our client population, we, as a non-residential facility, were not able to accept a diabetic on a mixed insulin dose if he was unable to measure his own insulin and did not wish to live in a nursing home, nor were we able to serve diabetics on extremely strict diets that required the supervision of a dietician. But it gradually became clear that with the increase in medical knowledge in the area of diabetes more and more people with just such needs were being referred to us. We have met these needs to the extent that at the present time no diabetic who has the motivation and physical stamina to enter our program is ever turned down because of technical problems with diabetic control.

COOPERATION WITH AGENCIES The cornerstone of our diabetic program is close cooperation with the Diabetes Education Center (DEC) in Minneapolis (which has built up a reputation as one of the best centers of its kind in the country) and with the Twin Cities Diabetes Association (TCDA). All diabetics who enter our program are informed of the services of the DEC and are encouraged to attend its classes either preparatory to coming to the rehabilitation center or at some time during their stay here. Nearly all of our staff members have been through the one-week course there, which they may attend alone or by acting as a sighted guide for a blind person at no cost to our agency.

In reciprocation, one of our staff members (usually our social worker or our nurse-consultant) gives a presentation on the problems of the blind diabetic as part of the regular teaching program for allied health personnel at the DEC. In this manner, we reach an average of 20 nurses, physicians, pharmacists, dieticians, occupational therapists, and counselors every two weeks, familiarizing them with services available for the blind diabetic and attempting to modify their attitudes toward blindness. On a scale of one to 10, rating interest and relevance, we are told that our presentation consistently gets the highest rating. In addition, new staff members at the Diabetes Center usually spend at least half a day at our center for in-service training.

Our cooperation with the Twin Cities Diabetes Association (TCDA) involves their periodically sending a dietician to our community housing resources (where out-of-town clients stay during their adjustment training) to instruct the cooks in the requirements of the diabetic diet and one of our staff's participation in TCDA's lecture service, speaking to professional and lay groups.

Over the past three years our attitudes as rehabilitation workers with the blind have influenced the attitudes of the local diabetes groups and their attitudes have changed some of ours; we now pretty much share the notion that optimal care for the blind diabetic involves, in many or most cases, relaxation of extremely rigid control rules in favor of attention to the emotional state and self-image of the diabetic; in other words, we regard the individual as a person and not just as a diabetic, and our experience is that this focus tends to improve the diabetic control rather than the reverse. We want quality of life for the blind diabetic, rather than just quantity and we suspect that we get quantity too.

Since our center does not have a residential facility, initially housing was a great problem. The client-load in the Rehabilitation Center ranges between 14 and 22, with a projected average of 16 at all times. Of this population, about 60.5 percent are residents of Minneapolis-St. Paul who can live at home and commute, 38.2 percent are from other communities in Minnesota, and 1.3 percent are from out of state.

Housing for Out-of-Town Clients

In practice, this means that at any given time appropriate housing in the community is needed for one-third to two-thirds of the client population. The average length of stay in these housing facilities is approximately four months; programs in the center range from two months to six months or more, depending on the individual needs of a given client.

At one time, Minneapolis Society for the Blind's only alternative for the very severe diabetic with special needs was a local nursing home or a board-and-care facility; but since the clients come to us in various stages of trauma and depression, it is clearly non-therapeutic to place them in situations where everybody else is depressed, physically or mentally ill, aged, retarded, alcoholic, suicidal, etc.

HOUSING RESOURCES At the present time, we are using two housing resources, one of which previously would not accept our clients, and another we just happened to find. The former is a Women's Christian Association residence, Lindley Hall, located about one mile from our facility. Lindley serves midday and evening meals, and provides on each floor a community kitchen with individual cupboards and tiny refrigerators for each resident where breakfasts can be made. The refrigerators are especially convenient for diabetics, since insulin and food for snacks can be kept in them. When necessary, a mobility instructor accompanies the client to Lindley Hall on the first day of his residence there to orient him to the facility.

A buzzer-system connects each room to a central desk so that our clients can summon help in any emergency. Staff is trained to deal with emergencies and keeps on file phone numbers of each client's physician and chosen hospital as well as phone numbers of Minneapolis Society for the Blind staff members.

If a new client cannot measure his own insulin or is unable to prepare his breakfast, arrangements have been made with Abbott Hospital, one block from Lindley, to provide these services as part of their Community Outreach program. On the first day, the client is picked up at 7:00 a.m. at Lindley Hall by a member of Abbott Hospital's security police. He is driven to the emergency entrance of the hospital and guided a short distance to the emergency room, where he is given his insulin shot by a nurse; he is then taken (until he can make it on his own) to the Abbott cafeteria, where he is assisted by cafeteria personnel in selecting his breakfast and negotiating tables—again, until he can manage on his own. He is picked up at the cafeteria by a member of our staff and driven to the rehabilitation center by 8:15 a.m.

Obviously, this system involves the cooperation of many people and a great deal of care was taken in setting it up. On-going education of Abbott Hospital staff is provided by our staff every three months. Whenever a new client comes in, all interested Abbott and Lindley personnel are contacted individually by phone and given information about the client, including any special problems that may be encountered. Much care is taken to make clear to Abbott staff the vital part they play in the total rehabilitation process and their enthusiasm and personal involvement has been quite extraordinary.

If a client is especially fearful, a Minneapolis Society for the Blind staff member will accompany him through this procedure on the first day; however, usually one of the other clients living at Lindley can handle this.

A Board-and-Room Facility

Our second housing resource is a board-and-room facility which we feel offers a somewhat more casual and relaxed atmosphere. Three meals a day are served here. The live-in cook is herself a diabetic, formerly employed as a cook at the Diabetes Education Center, and understands the requirements of the diabetic diet thoroughly. She has also been trained by our nurse-consultant to assist in measurement of both mixed and single doses of insulin and is capable of dealing with medical emergencies, but shares our feelings against over-protection of the blind diabetic. Many clients whose extremely severe diabetic conditions and other medical complications preclude their being accepted at Lindley Hall, will be accepted by this facility. In all cases where there are unusual problems, medical information is reviewed with the cook by the Minneapolis Society for the Blind social worker and the nurse-consultant.

As is the case with staff at Lindley, the live-in cook at our second housing resource has been given considerable training in working with blind individuals; she is also invited to training sessions at Abbott Hospital.

NURSE-CONSULTANT SERVICES The services of a nurse-consultant have been extremely significant in setting up systems for the blind diabetics in our program. Very early we discovered that communication with physicians regarding current client status was much more easily and efficiently accomplished through another member of the medical profession. Our nurse-consultant worked with us at first on a volunteer basis and then, as the program developed and her services came to be seen as an on-going program need, on staff as a consultant.

The nurse-consultant has had very thorough inservice training and is as familiar with blindness and the workings of Minneapolis Society for the Blind's programs as any full-time staff member. She has attended the one-week diabetes course at the DEC and makes it a part of her job to obtain current information on all new research in the area of diabetes.

She spends one day each week in the rehabilitation center. At this time, she reviews medical information and makes her own notes; sees clients whose physicians have requested her services for them (e.g., for blood-pressure checks); instructs clients in methods of administering their own insulin; and holds counseling sessions with clients

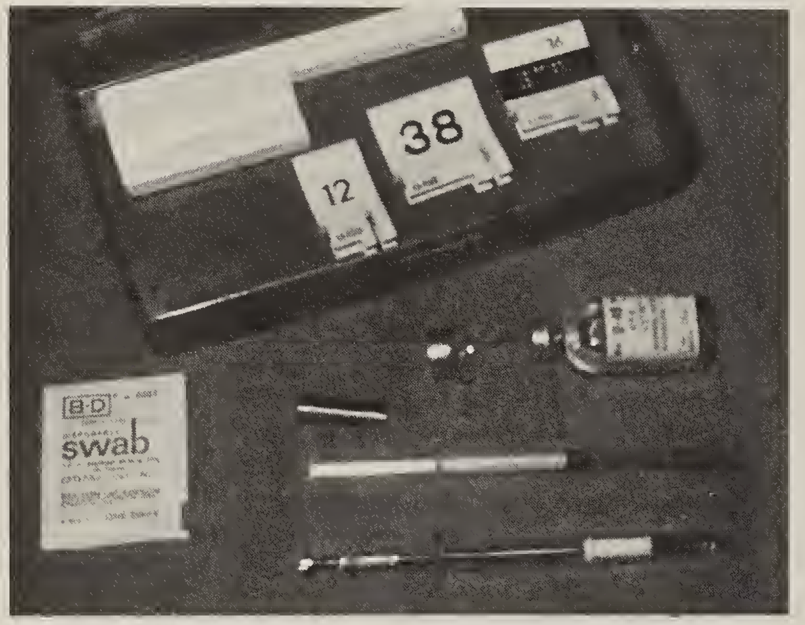

Figure 1. Teaching Kit for Self-Measurement and Administration of Insulin

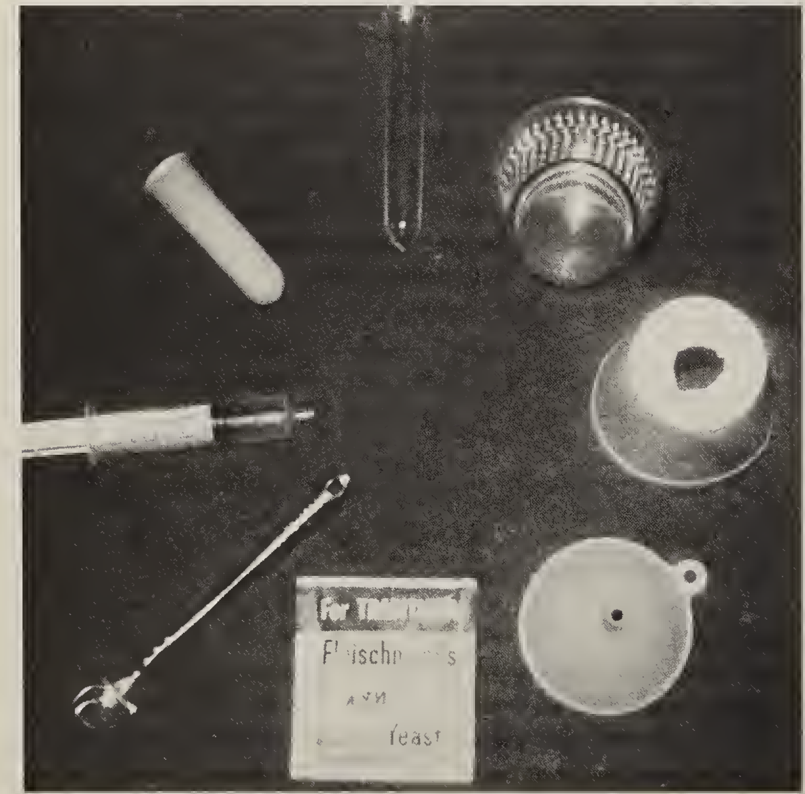

Figure 2. Teaching Kit for Yeast Method of Testing Urine

who are concerned about their medical situation (projected surgery, etc.). She often serves as liaison between doctor and patient, interpreting medical information and procedures to the diabetic client.

In routine interviews with each diabetic client newly admitted to the program, the nurse-consultant works primarily from information contained in the Diabetic Profile Sheet (described in greater detail later in this article). In some cases, errors based simply on misinformation are picked up and corrected: for example, many diabetics believe that insulin must be refrigerated, whereas the fact is that insulin manufactured today can be stored for long periods of time in a cool, dry place without deteriorating. Furthermore, very cold insulin injected under the skin produces more tissue damage than room-temperature insulin; thus refrigeration of the bottle of insulin actually in use is not only unnecessary, but is contraindicated.

Another common error on the part of diabetics is that *Clinitest* and *Testape* methods of urine testing are interchangeable; in fact, *Testape* is so much more sensitive to sugar that if its results are believed to be identical with the results of the *Clinitest* method, errors of over-control can occur.

In the routine interview, the nurse will also attempt to discern the client's general level of information concerning diabetes. If the client appears to be uninformed or if he has never had a formal course of diabetes education, she will describe the program of the Diabetes Education Center and inform the client that he can enroll in this program, at no cost, as part of his rehabilitation at Minneapolis Society for the Blind.

A large part of the nurse's consulting function is done from her home. She contacts by phone the home physician of each client referred to our program, describes the program to him in detail, stressing the emotional and physical demands that the diabetic will encounter, and asks to discuss any program limitations the physician feels will be advisable. In the case of out-of-town diabetics, she asks the home physician to suggest a local physician to supervise his patient's diabetes while he is in our program. The nurse will, at this point, write up the physician's recommendations on a case progress note-sheet and enter her signed notes in our case file.

Responses from physicians to her contacts with them have been uniformly positive. Almost all of them express surprise and interest at her description of our services and thank her for permitting them to participate in the patient's rehabilitation and for respecting the doctor-patient relationship. Many comment that in the future they will feel much more comfortable in suggesting rehabilitation services to diabetic patients who are losing vision.

Using this individual approach with the physicians, we feel that we are doing more than arranging for good medical coverage while the diabetic client is in our program; we are also performing a very effective public relations function, gradually building up the physicians' knowledge of services available to blind persons and confidence in our abilities to provide these services without jeopardizing their diabetic patients' health.

DIABETIC PROFILE SHEET

An important aspect of our nurse-consultant's function concerns the diabetic profile sheet she has devised. This sheet contains information from the diabetic himself concerning his diabetes and must be filled out by every diabetic coming into our program. It is shared with all persons involved in meeting the clients' needs while he is here—his physician, Abbott Hospital, and housing facility staff.

We introduced the use of this sheet when it became clear that textbook information on insulin reactions and other occurrences was seldom descriptive of the individual case and that what the diabetic said about his diabetes very often differed even from what his own doctor said. We learned through experience that every diabetic is different and that sometimes the diabetic who tells us that he knows more about his condition than the doctor is *not* being denying or hostile, he is simply telling the truth. We also learned that many physicians know very little about the incredibly complex entity that is diabetes, and that the best and most informed physicians are the ones who are willing to concede that medical information on the control of diabetes is by no means complete at this time.

In addition to our nurse-consultant's services, our medical arrangements for out-of-town diabetics include one factor we consider highly significant and effective, the enlistment of a local "physician of record" to provide on-going medical care for the blind diabetic while he is in our programs.

MEDICAL SUPERVISION It is our experience that continuity of medical supervision is of utmost importance in the control of diabetes and that the state of mind of the diabetic is extremely significant in establishing optimal control. These two factors, we find, are tied together; if the diabetic likes and trusts his doctor, he feels less stress and control is consequently more stable.

When a diabetic is referred to us from out-of-town, we inform him that a nurse will contact his home-town doctor and ask for his recommendations before the client's entry into the program. We tell the diabetic client that on the first day of his program, he will have the opportunity to meet the physician who will be supervising his care, get to know him somewhat, and discuss his particular case of diabetes with him. We will have shared with this physician in advance a copy of the diabetic profile sheet, all medical and eye reports, and records of our phone conversations with the home physician, together with a letter of introduction from a staff member of the Minneapolis Society for the Blind describing the client's situation, special needs, and particular anxieties.

This contact with the new physician before crises arise has, we believe, the effect of making the diabetic client feel much more secure and of reducing the likelihood that emergencies will occur. Since the setting up of this system about two years ago, the incidence of diabetic crises of *any* nature (including insulin reactions) has been sharply reduced; and since the diabetics we are accepting into our programs have progressively more severe conditions, we do not feel that this minimization of crisis can be entirely coincidental.

Use of Local Physicians

Occasionally a home physician will request that a particular Minneapolis doctor carry on supervision of his patient's diabetes and, if this is the case, we will contact the recommended physician to acquaint him with our program. In most cases, however, the home physician will accept any of the physicians at Nicollet Clinic, a facility whose staff members are very much aware of our programs and sympathetic to the philosophy of rehabilitation. There is a considerable amount of ongoing contact between our staff and the chosen physician during the entire period of the diabetic client's stay in the program.

As a staff, we are very much interested in medical research in the area of diabetes, new ideas about control, and new aids and appliances for the benefit of blind diabetics. We are on the mailing lists of all the diabetes groups in our area and are represented at most of the important local diabetes seminars and teaching programs. We are used in a consulting capacity by many local hospitals and agencies, and we regularly send staff members to diabetes information fairs to describe services for the blind and to demonstrate aids and appliances.

INSULIN TEACHING KIT We have developed a teaching kit for self-measurement and administration of insulin, which includes all of the devices we have found to be useful at the present time (see Figure 1): a copper sleeve, an insulin bottle guide (both made at the Minneapolis Society for the Blind), a needle guide from the American Foundation for the Blind's catalog, samples of the very new *Insulgage*, a series of gauges that clip onto a disposable syringe (which promises to make self-adjusted doses and self-measured mixed doses really feasible for the first time), the *Hill Accurate Dosage Syringe*, and samples of various disposable syringes. This kit is used to introduce various methods of insulin measurement to blind diabetics; if a diabetic feels that he wishes to learn to measure his own insulin dosages, the devices appropriate to his preferred method are ordered for him, and he is given further instruction in their use by the nurse.

A second teaching kit includes equipment for testing urine by means of a refinement on the old yeast method of testing (see Figure 2); we are assisting the Diabetes Education Center in researching this method. The method uses *very crude components* and is extremely cumbersome; very rarely does a diabetic use it regularly or over a long period of time, but it can be useful on an emergency basis when self-testing is imperative. The cost of the components is around $2; because the test tube is sometimes difficult to obtain, we have substituted various types of small bottles. Directions for the use of this method can be obtained through the Diabetes Education Center, 4959 Excelsior Boulevard, Minneapolis, Minnesota.

The teaching kits are also used to instruct rehabilitation counselors in the field (as part of a three-day training seminar put together recently by our agency) and for demonstration at local fairs and agencies. Our rehabilitation teachers also use them for home visits to blind diabetics in the community.

Adjusting the Basic Program

Again stressing the fact that every diabetic is different and has different needs, we have found that optimal learning conditions are produced by making specific adjustments in our basic program in terms of the individual case.

We will attempt to schedule such class areas as orientation and mobility, with their high physical demands, at a time (e.g., the first hour in the morning or right after lunch) when exertion is least likely to produce an insulin reaction. In other areas of instruction, we recognize that if a diabetic's sense of touch is impaired and certain learning tasks are therefore more difficult for him, it is wise to separate the classes for which touch is important by scheduling between them activities in which touch is not used so

"... people must not be expected to fit into programs but ... programs must be modified to fit around people."

much: we will, for example, sandwich an hour of mobility between two hours of braille.

We also recognize that our program usually represents an increase in stress and exertion that is likely to upset diabetic control during the first two or three weeks, or until the diabetic adjusts to the new schedule. We deal with this by scheduling an independent hour in the middle of the day, during which any client may choose to rest if he feels it necessary. There are two cots set up in our gym area for this purpose. We may, in addition, schedule extra rest periods during the day in individual cases or permit a client to start his class day an hour later for the first week or so and work up to a full day.

We also acquaint clients and their physicians in advance of the program with this anticipated increase in stress; the physician may want to stay in closer contact with his patient during this initial period in the program or suggest modifications in insulin dosage or diet.

CONCLUDING REMARKS Having described Minneapolis Society for the Blind's "Diabetic Program," I have, by stating it as such, made it sound very neat and tidy; but of course it isn't that way at all—because we are working with people and people are rarely neat and tidy, nor do they fit predictably into programs. The element that is impossible to describe, and that I feel makes our "program" successful, is our acute awareness, as a staff, that people must not be expected to fit into programs but that programs must be modified to fit around people.

The appropriate elements for any good "diabetic program" are here at Minneapolis Society for the Blind; however, it is the particular character of these elements that is unique to our agency and our community. We have, for example, access to all the resources of the Diabetes Education Center, which many authorities consider the best center of its kind in the country. We were fortunate to find a housing resource with a trained diabetic cook. The fact that Abbott Hospital could provide us with services as part of its new Community Outreach program was timely. We devoted considerable time to locating and developing most of our resources, and the fact that we were able to recognize and take advantage of favorable circumstances within the community came from our awareness as a staff of the extraordinary difficulty and complexity of the lives of the blind diabetics who come into our programs.

The elements are here, but not all diabetics want or need all the parts of our program. If, after being made aware of what we offer, a diabetic chooses not to live in the housing we can arrange, chooses to measure his insulin by a two- or three-finger measurement, elects to abuse his diabetes in any number of ways—we can live with that too; we feel that it is each person's right to conduct his life as he wishes and that our major responsibility is to make him aware of possible consequences.

This staff eats, sleeps, and breathes diabetes. Probably any one of us knows more about the condition than the average doctor. Diabetes absolutely fascinates us and has become for us a primary specialty, along with blindness, rather than a secondary one. And that *is* our diabetic program: our *awareness of and knowledge about* diabetes and the problems of the diabetic. Our programs and systems are peculiar and incidental to our community and our agency; our interest in the diabetic as a person came first, and our systems and accommodations followed.

Patients' Expectations

—continued from page 401

the center's philosophy or rehabilitation capabilities, then referral to another agency might be the most appropriate and worthwhile course of action. If a patient is seeking an ombudsman, he might be referred to a social worker at home who possesses a paternal, somewhat forceful manner and who is known to have some degree of influence. If he is seeking a sanctuary or time away from the situation which will realistically improve things, and especially if he has a potential for learning, then a case for his remaining can be made. If, on the other hand, his problems and responses to them are chronic, possibly predating his blindness, then emphasis should be placed upon active social work or psychological intervention which the center may or may not be able to provide.

The ability of a center either to fulfill the expectations and needs of its clients or patients, or to convert a patient's expectations to those which it can satisfy is quite powerful. A recent study by the authors (Needham & De l'Aune, in preparation) indicates an extremely high degree of satisfaction with the adjustment-to-blindness training received at a Veterans Administration residential adjustment center. Work is needed to determine which of these two processes, expectation satisfaction or conversion and subsequent satisfaction, occurs more frequently.

Again, it should be emphasized that it is extremely important to look beyond the words that a patient utters when asked his reasons for admission. His real expectations must be heard and dealt with in some fashion if the residential center is to provide optimum service. On the other hand, it is felt that the center should inventory its resources and review to what extent it can marshall them for the patient who comes for so-called "adjustment training." With this self-searching it is hoped that a tolerance and acceptance of the needs of blind persons will emerge and the limits of that rehabilitation which is termed adjustment to blindness will be expanded.

The authors wish to express their appreciation to George M. Gillispie, David L. Robinson, M.S.W., and Joseph J. Ventimiglia, M.D., for their suggestions.

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Changing Attitudes Toward Blindness: A Role-Playing Demonstration for Service Clubs

AUDREY STRAUS KOCH, M.A.
Ms. Koch worked for three years in a private agency as a rehabilitation teacher with elderly blind people and has developed a plan for training staff in institutions to work more effectively with blind residents.

Abstract: *A short program to improve attitudes toward blind persons and to correct misinformation was designed and presented to 13 Lions and Rotary Clubs. A role-playing demonstration (fully described) with blindfolded members of the audience was followed by a discussion period. Through the administration of a questionnaire before the program and one to two months after, it was found that significant improvements occurred in those attitudes in which blind people are viewed as helpless, inferior, and dependent. Improvements in the participants' knowledge about blind people did not occur to the extent expected.*

Note: *The attitude change project described in this article was part of Ms. Koch's program of independent study for the Master of Arts degree in social psychology at Goddard College, Plainfield, Vermont. Complete copies of her thesis are available in print or on tape at cost from Ms. Koch.*

Wherever you may go, the word shall pass
That you are stranger there, and you shall know
The unreceptive ground and fierce sunlight
In the press of hostile faces . . .
Rex Loman, "Bitterweed."

▪ The poem was quoted by a deaf man, but he could have been crippled, spastic, or blind, and he would have felt the same way. Literature abounds on attitudes toward blind people and the methods for coping with these attitudes. As a rehabilitation teacher of blind people, I found that most clients adjust to their blindness in a few months, but they spend the rest of their lives trying to adapt to the way the sighted world treats them.

I decided, therefore, to approach the problem of attitudes toward blindness from the perspective of the uninformed sighted public and to set as my goal the development of a technique for change which might be utilized by others in the rehabilitation field, both to facilitate the rehabilitation process and to improve the employment situation for blind people.

SERVICE CLUBS SELECTED

Lions and Rotary Clubs were selected as the target groups because of their potential as employers and because their policy of compulsory attendance would make them easier to test. In all, programs were presented to five Lions and eight Rotary Clubs. The main attitudes to be changed were those in which the blind person is seen as inferior, helpless, and dependent.

The two-part presentation I devised consisted of a demonstration designed to dispel these attitudes and a discussion period. The presentation lasted no longer than 30 minutes, the usual length of time allotted for programs by most service clubs.

The demonstration was based on the ideas that a change in perception (Hardy & Cull, 1972, p. 149) may change an attitude and that a person, once having been thrust into the role of the so-called helpless individual, can change his perception through experiencing his own ability to cope without being helpless (Borgatta & Evans, 1968, p. 109). Showing how a blind person copes with everyday living was then a logical choice. Being blindfolded gave four members of the audience an opportunity to put themselves in the shoes of the blind person and to make better use of their remaining senses, while their fellow club members could share their perceptions.

The demonstration began by having each of the blindfolded participants sign his name on an index card under the sighted signature he had made before the program. A small clip board facilitated this procedure, but a signature guide was not used, as it turned out to be a deterrent; most of these men have large flamboyant signatures, and the guide inhibited them by not providing enough space. The index cards were then passed around the room, with a comment such as: "This is the first example of something which you may think requires eyesight, but in reality does not. You have signed your name hundreds of times, and if you went blind, you would continue to sign it." The sighted and "blind" signatures were always sufficiently similar to impress the audience, and the participants enjoyed seeing them later.

Humor played an important part in the presentation; people learn more when they are having fun than when they are being lectured. Unless stated as a comment from

"Group dynamics played an important part in the program. Instead of lecturing the audience, I just waited and let them tell me what I wanted to hear: 'I have no fear of being blind.' 'You're not helpless.' "

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the speaker, all remarks are taken verbatim from the tapes made of the programs. Here are some typical remarks which accompanied the name-signing: "That's a release, Chuck. Sign your release." "It says to report to Fort Meade, Harold." "You just hired her for a year, and you don't even know it, Doug." "Look at the salary she put in." "Wait till you see the job description." If they did not come up with something, which was rare, I would throw in something to relax them: "Well, actually it's a blank check."

It was important also to give ample encouragement to the participants after each activity. For instance, after the name-signing I sometimes said, "Gorgeous. Every bit as illegible as your sighted signature."

SENSORY EXERCISES The succeeding sensory exercises were given to the participants individually, although sometimes if a particular exercise were missed by one person, another might try it. Next I opened my purse and took out my keys. A male speaker would just take his keys out of his pocket; they still make a distinctive sound. After stating that keys had been taken out, he would then be asked to select the speaker's house key, and then the fun began: "I don't know. You never let me have it." "You want some legal advice on that?" "Does he get to keep the key?"

To utilize the sense of smell, I took a container from my cosmetic case and sprayed on some perfume. A male speaker could use some masculine cosmetic or, if he had a female participant, put some perfume on her. One participant did not smell it at first: "You're older than I thought, Russell."

Chances of having a banker as a participant were good in a service club, so, when possible, he would be given the money questions. The participant was handed a saucer of coins, with an explanation about the rough edges on quarters and dimes and the smooth edges on nickels and pennies. "When we get to the toll booth, I'll need 65 cents, please," was the speaker's request. The audience added: "Suburban Trust should see him now." "This is how we train tellers . . ." ". . . for a power failure."

The Sense of Smell

Not wishing to rush the money man, I would proceed to the next exercise while he examined the coins. Most people identified a spice container, but they frequently missed the actual spice. This was no problem, however, because by using cloves I could then hand the participant a whole clove to identify.

"Meanwhile, back at the toll booth"—it was time for the speaker to check on the coins. Usually the correct choice had been made, compliments were in order, and the audience applauded. In those rare instances when someone had made a mistake, it was important for the speaker not to be rattled and to have a line ready: "Well, we'll have to excuse you because you haven't been blind very long." ("He was blind for six hours Saturday night.")

A braille pocket watch was handed to the next speaker, with an explanation of the dots, the catch being at three o'clock, and the short hand having an arrow. It was set for an easy time to read and most participants read it correctly. Then it would be passed around the audience with a speaker's comment: "A blind person tells time the same way you do, by the position of the hands; your watch may not even have numbers on it."

A wallet was handed to the next participant and it was always identified. When asked if he noticed anything unusual about the placement of the bills, he would then locate them folded in different ways. The "mad money" in a separate pocket usually required a little prompting, but then it was also located.

The Sense of Taste

Including an article for the sense of taste proved to be a problem. Maybe the reader can come up with a better one than I. The participant could hear the sharp sound of an apple being cut on a plate, but sometimes guessed it as the striking of a match. I then ate a piece of apple and handed the plate to the participant. There were no problems finding a piece, eating it, and identifying it, which was followed by the speaker's comment: "You notice he had no difficulty locating his mouth." ("Everybody here knows I got a big mouth.") This episode also provided an opportunity for the speaker to point out that the newly blinded person can still feed himself but might like to have a description of the food on his plate.

During the presentation, as the occasion arose, the speaker asked the participant to "look" at something so that the audience would understand that vocabulary does not have to be changed. A point was also made that blind people need to be called by name or touched on the arm to know if they are being addressed.

Guiding a Blind Person

At this point three of the four participants had engaged in two activities each. They were then asked to remove their blindfolds; the speaker, using the remaining participant, then demonstrated incorrect and correct ways of guiding a blind person, first holding his arm and then letting him hold hers: ("Her arm, Chuck, her arm.") It did not matter which was done first; invariably the guided person picked the correct way as the most comfortable, and the point was reinforced by the speaker: "It stands to reason that the person who can see should go ahead of the person who cannot see."

Thereafter the person was guided back to his chair, his hand was placed on the chair, and he seated himself, so that the speaker could say, "You notice that he is perfectly capable of seating himself: he does not need to be shoved or choreographed into his chair. Now let's give them all a hand." Enthusiastic applause followed.

COMMENTS AND REACTIONS The demonstration usually took about 12 minutes, following which the speaker asked for comments and reactions, first from the participants and then from the audience. Group dynamics played an important part in the program. Instead of lecturing the audience, I just waited and let them tell me what I wanted to hear: "I have no fear of being blind." "You're not helpless." "And if you need to get rid of your eyes, you can get along." "A blind person can lead a normal life." "They are not helpless. They can do a lot of things for themselves." "The blind person is capable of caring for himself."

When asked why they thought the demonstration had been done with club members, rather than bringing in a blind person, they responded: "The blind person has already learned to do these things." "To show that it wasn't put on."

Once again they got the point themselves and gave it back to me. Copies of the pamphlet "What Do You Do When You See a Blind Person?" (published by the American Foundation for the Blind) were handed out at the end of the program.

Measuring Attitude Change

Questionnaires designed to measure attitude change were administered before each presentation and one to two months later. These questions included 13 attitude questions and five knowledge questions about blindness and how to deal with a blind person. Comparing the results of the "before" and "after" questionnaires was just as gratifying as the verbal responses had been. Nine attitude questions showed a significant ($p<.05$) gain in score ranging from 16 to 57 percent on a four-point Likert-type scale. Two attitude questions dealing with employment did not show improvement and more work needs to be done in the area of employment.

Examples of attitude questions showing highly significant ($p<.001$) change follow: "Life would not seem worth living if I were suddenly blinded." "Blind people are preoccupied with longing for sight." "Blind people need help in carrying out routine activities of living." "I might feel uneasy in a social situation with a blind person." "I would feel comfortable with a blind person." Choices of responses were: Strongly Agree, Slightly Agree, Slightly Disagree, and Strongly Disagree.

A comparison of scores between Lions and Rotarians showed no significant differences in either attitudes or knowledge. Although the Lions have traditionally worked *for* the blind for years, they have not worked *with* blind people. After one club program, a Lion came up to ask me why it had been so hard to find any blind people the previous Thanksgiving when they wanted to give away 10 turkeys. "Maybe they'd rather have a job," I said. He looked at me with a blank expression and walked away.

CHANGE IN KNOWLEDGE Although I had expected an increase in knowledge to accompany attitude change, this was not the case. Two knowledge questions showed an improvement, one showed no change either way, and two showed a decrease. However, these latter questions were not worded sufficiently similarly and may have confused the respondents. The "before" and "after" questionnaires contained essentially the same questions, but placed in a different order and reworded slightly so that no one could say the respondents had simply learned to answer these particular questions.

As stated above, more work needs to be done on changing attitudes toward the employment of blind people. It probably would not be possible to accomplish any more attitude change in one meeting than had already been achieved. However, if a second meeting were scheduled, it could be handled by a rehabilitation counselor rather than a rehabilitation teacher. Possibly an employed blind person could accompany the counselor to answer questions. In my experience, the audience normally responds to a competent blind person by thinking that if they went blind, they could never be so capable. However, if their consciousness had been raised by the first meeting, perhaps they would be more prepared to accept the idea that any competent sighted person can become a competent blind person if he has to.

A Skit to Start Discussion

My inclination would still be to keep the program from getting too heavy. Here is a skit I have used to start discussion. Two people are selected from the audience. One is given a Hoover long cane and dark glasses and is told that he has no lines in the initial skit. The other person is told to respond as he normally would.

The speaker wears an apron, or, if male, a napkin over the arm. The audience is told that these are two friends at a restaurant, and this is what frequently happens when one of them is blind:

Speaker: Good evening, sir. (She looks only at the sighted man.)
Sighted Man: Good evening.
Speaker: Would you care for a drink before dinner?
Sighted Man: Yes, thank you, I'll have a martini.
Speaker (pretending to write): Yes, sir, and what will *he* have?

The "blind" man is then asked how he feels. "I feel like a second-class citizen." "She treated me like a nonentity." "Don't I look old enough to order my own drink?"

The format can be varied according to the audience. For example, the question could be whether "he" wanted cream and sugar in his coffee if the audience is a church group. In a mixed audience, it is even more effective to have a woman as the sighted person and a man as the "blind" person, because of the greater adjustment usually necessary for a blind man. As Father Carroll (1961) noted years before women's liberation, the blind woman has an easier time, because she was already brought up to feel helpless, inferior, and dependent and is therefore ready for the role which society imposes on her as a blind person.

The skit leads into a discussion of why the waitress feels so uncomfortable and acts this way. All the concepts of helplessness and inferiority can be brought out, with as much response as possible being elicited from the audience. Discussion could then concentrate on the employment potential of a blind person. The writer would be most interested in working with agencies or individuals in setting up such a program.

This project has taught me that one should never assume that conditions must remain as they have always been. Given new perceptions and interactions with their friends, people are capable of changing their attitudes.

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Blinded Vietnam Era Veterans in Search of Work

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Abstract: *A high rate of unemployment among Vietnam veterans prompted an investigation into their use of available job resources and training in job-seeking skills. Response to a questionnaire submitted to these veterans revealed that few were utilizing available resources and that training was needed in resumé preparation, job-seeking procedures, and interview techniques. The need was established for further research into the problems of the blind veteran and the necessity of establishing training courses to bridge the gap between rehabilitation and attainment of employment.*

■ Of the thousands of soldiers, sailors, and airmen who went to fight the Vietnam War, 662 returned blind or visually impaired. Agencies, educational institutions, business, and industry should be doing everything in their power to enable these men to return to the work force meaningfully employed. The high unemployment rate of Vietnam veterans, a major reason for this study, pointed up the need for closer examination of the crucial step between vocational rehabilitation and initial employment, and the need for the creation of new programs for the blinded veteran.

In an exploratory study of the blinded Vietnam veterans' search for employment, three areas were investigated: 1) utilization of national, state, and community resources in the search for employment, 2) utilization of accepted methods or skills (resumé preparation, interview techniques) for gaining employment, and 3) determination as to whether the severely visually impaired and the totally blinded veteran differed in their methods of pursuing the search.

A survey of the literature indicated that only 25 percent of the blinded veterans of previous wars had participated in full-time employment. Robert L. Robinson conducted a survey dealing with the blinded Vietnam veteran, but not specifically with job search process (*New Outlook for the Blind*, May and September, 1974). We were in basic agreement that more comprehensive research is needed in this area.

Robinson pointed out that the average Vietnam veteran is young, he has the majority of his working life ahead of him, and the adjustment to blindness is further complicated by the adjustment that has to be made from the military to the civilian world.

THE SURVEY QUESTIONNAIRE How does a blind person get a job? Where does he get job leads; how does he set up interviews? Does he prepare a resumé? How does he handle the job interview? A seven-page questionnaire was mailed to the 662 known blinded Vietnam veterans to try to find answers. The questionnaire concerned personal data (no names or addresses to preserve anonymity), education, employment, job resources used, resumé procedures, interview techniques, and obstacles to gaining employment. There was a 30-percent return rate. Two hundred thirty-two responses were received, of which 203 were usable. The return rate is similar to that in Robinson's study. Of this number, 85 were totally blind and 118 were severely visually impaired (legally blind). The majority were under age 45. Responses from the visually impaired were separated from those of the totally blind veterans in order to study differences and similarities of the two groups.

Based on a study of the accepted methods of finding employment, the problems of finding employment for the blind and the blinded veteran revealed possibilities that:

1. Many resources established to aid the blinded veteran in his search for employment are not being fully utilized.
2. There is a critical gap between the completion of a vocational rehabilitation program and the actual employment situation involving the job-lead search, resumé preparation, the interview situation, and, of course, the attainment of employment.
3. The techniques used in the job search process are different for the severely visually impaired veteran than for the totally blinded veteran.

Answers to the questionnaire indicated agreement with the first and second hypotheses, but rejected the third.

Veterans were asked to check job sources that they had used in their search for employment. The possibilities included the Veterans Administration, Vocational Rehabilitation Section and Social Work Section; the Federal Job Information Center (CSC) Civil Service Commission which has an advisor to both veterans and the handicapped; the National Alliance of Businessmen; various employment agencies, college and high school placement offices, professional or trade associations, state services for the blind, state services for vocational rehabilitation, veterans organization newspapers (classified advertisements), magazines, books, and the employer prior to entering the service. Responses indicated that there was little use of any of the above-mentioned sources in their search for employment. Agencies for veterans were used by a small percentage of both groups—eight percent of the totally blind and ten percent of the legally blind. Public sources such as newspapers and magazines were used by nine percent of the totally blind veterans. The percentage of legally blind veterans using these resources was higher, at 36 percent, but still a small percentage of the total number of responding legally blind veterans. Approximately four percent of the responding totally blind veterans and eight percent of the legally blind veterans returned to their former civilian employer.

Resumés and Preparation for the Interview

Questions regarding resumés dealt with matters such as preparation and presentation. Twelve percent of the responding totally blind veterans presented resumés. Of that number, only four percent prepared the resumé themselves, which may be attributed to the degree of blindness experienced. The percentage of both the totally blind and legally blind veterans who had had any formal training in resumé preparation was only seven percent. Methods of proofreading the resume were similar for both groups, but the percentage who did proofread their resumes was low—20 percent.

The interview section asked questions on information about the job obtained before the interview, methods of travel to and from the interview, and discussion of blindness during the interview. Obtaining preliminary information about the employer or place of employment before the interview is recommended by most experts in the field of employment. Twenty-four percent of the totally blind veterans and 37 percent of the legally blind veterans utilized this practice.

Very few veterans travelled to the interview without assistance. The same percentage of totally blind and legally blind veterans had assistance to travel to the interview. These results are somewhat surprising because of the importance of independent mobility in the world of work.

DISCUSSING BLINDNESS Mention of blindness in the interview is most important. Only by frank and open discussion of blindness and the skills needed to overcome the disability can the misconceptions existing in many employers' minds be dispelled. Responses indicated that an equal number of totally blind and legally blind veterans discussed their blindness and job modifications with their prospective employer at the time of the interview.

Answers to the questionnaire confirm that the blinded Vietnam veteran, whether totally or legally blind, is not fully utilizing the resources and benefits available to him. The low percentages in all responses indicated that few veterans were adequately trained in the accepted methods of seeking and attaining employment. Many blinded veterans do not know how to bridge the gap between the vocational rehabilitation program and an actual employment situation.

Results of the study indicate the need for additional research in several areas:

1. To establish exposure to vocational goals; helping the veteran to realize what job possibilities are available to him and what his own capabilities are, during the initial rehabilitation period.
2. To design education courses in the use of the resources and accepted methods of procedure for the job search.
3. To train Veterans Administration rehabilitation counselors and VA social workers in more effective implementation of all phases of the job search.
4. Since not all blind veterans attend a blind rehabilitation center, a program of correspondence courses should be established to assist this veteran in his employment search. These courses could be administered through the VA, or some other agency involved in employment for the blind, or through a community resource on a fee-paid basis.
5. Because of the incidence of his blindness, the veteran has not had the benefit of years of training that a blind civilian counterpart may have had. Education courses should be geared toward the proper use of tape recorders, tools for the blind, and other available sensory aids.
6. Public awareness programs should be formulated to overcome myths about blindness and emphasize the capabilities of the blind.
7. Investigation of the financial demotivation factor in the loss of Social Security Disability Insurance and the Veterans Administration Individual Unemployability Compensation when certain blinded veterans enter the work force, what is the degree to which this loss of benefits affects the blind veteran's desire to enter the world of work?

A New Kind of Program Is Needed

The first step has been taken by disclosing the problems in the job search process. The next step will be for those in adult vocational rehabilitation to develop a program to give the blinded veteran the same opportunities as his sighted peers to seek and find work.

Distribution (According to Mailing Address) of Blinded Vietnam Veterans

State	*Number*	*State*	*Number*
Alabama	16	Nevada	1
Alaska	—	New Hampshire	—
Arkansas	10	New Jersey	9
Arizona	5	New Mexico	7
California	52	New York	28
Colorado	14	North Carolina	22
Connecticut	9	North Dakota	2
Delaware	1	Ohio	26
Florida	32	Oklahoma	10
Georgia	25	Oregon	8
Hawaii	7	Pennsylvania	27
Idaho	6	Rhode Island	8
Illinois	32	South Carolina	13
Indiana	10	South Dakota	2
Iowa	5	Tennessee	20
Kansas	13	Texas	49
Kentucky	17	Utah	3
Louisiana	12	Vermont	—
Maine	5	Virginia	13
Maryland	8	Washington	20
Massachusetts	9	West Virginia	4
Michigan	34	Wisconsin	8
Minnesota	12	Wyoming	1
Mississippi	5	District of Columbia	8
Missouri	17	Philippines	1
Montana	1	Puerto Rico	14
Nebraska	3	TOTAL	662

The Cranmer Abacus and Its Use in Residential Schools for the Blind and in Day School Programs

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Ms. Becker and Mr. Kalina are teachers at the Arizona State School for the Blind, Tucson.

Abstract: *The introduction in the early 1960's of the Cranmer abacus as a computational aid for blind persons caused a "mathematical explosion" in the mathematics curriculum for blind children. A number of studies are cited to show that the abacus has a positive effect on the development of arithmetic skills and that its use in residential schools is now very widespread. Blind children enrolled in public schools are very often still using other devices, although the abacus is gaining in popularity.*

■ The level of achievement of the blind student has always been eight to 27 percent lower than the sighted student (Nolan, 1959; Brothers, 1972), a difference which increases as computations become more difficult and grade-level increases. Marion Lewis, a teacher at the Tennessee School for the Blind, writes, "We sometimes hear sighted children complaining about their problems in mathematics, but we can only wonder what would happen if they were given a braillewriter, cubarithm slate, Taylor slate, and a different code in which to write. What if they were told that after they had mastered all of these, they would probably be slightly below average in what they could achieve?" (Lewis, 1971).

The abacus for blind students caused a "mathematical explosion" when it was introduced in the early 1960's. It is now the single most used tool for computation in schools for the blind and is beginning to be used in the public schools (Davidow, 1974). In 1974, specific figures were not available, but Carson Nolan, coordinator of educational research at the American Printing House for the Blind (APH), estimates that a "substantial number of schools are using the abacus." APH has sold over 50,000 abacuses in the last ten years (C. Y. Nolan, personal communication, April 1974). Rather than dying out as a computational device, particularly when work becomes more difficult, proof of its value is continuing to grow stronger.

THE SOROBAN AND THE BLIND

The Japanese have utilized the *soroban* abacus for the last 400 years and its use by the blind in Japan goes back 90 years. In 1881, at the Kyoto asylum, Japan's first school for the blind, it was found that the conventional abacus was "disadvantageous" for blind students because the counters moved too easily. This led, however, to the adaptation of the *soroban* for use by the blind and the development of a curriculum. Improvements and changes are still taking place; for example, in 1965 the International Abacus Association (I.A.A.), with members from Japan, the Republic of China, and the Republic of Korea, developed an Abacus Proficiency Test for the blind. Because it was realized that abacus calculation would play a very important role in the future social and vocational life of the blind adult, and because it was further discovered that abacus calculation by the blind had never been popularized, the development of a proficiency test was a very important step in publicizing its use and importance ("Blind education . . . ," 1966).

The idea of using the abacus for the blind in the Western world was first discussed by the American Association of Instructors of the Blind in 1920. Forty years later, T. V. Cranmer adapted the Japanese *soroban* and developed the now widely used Cranmer abacus (Hattendorf, 1971).

As reported by Hass (1965), Cranmer writes, "Since 1956 my colleagues in the Kentucky Division of Services for the Blind and I have been conducting informal but serious tests into the possibility of modifying the Japanese abacus for use by blind people.

"With this especially designed abacus our skill increased and we were able to do complex arithmetic quickly, efficiently, and effortlessly. We would add, subtract, multiply, divide, extract square roots, handle decimals, and do the arithmetic associated with fractions at a speed never before attainable by blind people."

During the summer of 1964, the first formal workshop—the University of Kentucky Abacus Institute—met to offer a complete course on abacus calculation. Led by Fred Gissoni, author of *Using the Cranmer Abacus for the Blind* (1962), it was attended by 33 teachers, including Valemar Paashe of the Danish School for the Blind, who presented fractions; Professor K. Takeda, teacher at the University of Tokyo's School for the Blind; Dr. Mae Davidow, author of *The Abacus Made Easy* (1966), and T. V. Cranmer. These teachers were enthusiastic about learning the abacus and introducing it to their students (Gissoni, 1965).

TEACHER TRAINING The importance of adequate teacher training led to the abacus course taught in the summer of 1965 at the University of Kentucky and to subsequent other workshops during the '60's. In 1967, George Peabody College offered college credit for such training courses. "Until teachers feel comfortable in using the abacus and understand the reasons in back of the manipulative techniques, they cannot teach their students" (Lewis, 1970). The amount of time required for teacher training has been one factor that has kept the abacus from being accepted more rapidly on a wider scale (Hattendorf, 1971).

Natalie Barraga (1974) wrote, "It is fairly natural for staff and faculty who have become accustomed to using certain materials in a certain way to be resistant to learning something new and different." Research studies all point toward the need for more teacher training—use of summer institutes, college courses, local programs within residential schools, and workshops. One concrete suggestion is contacting instructors and staff from schools who have successfully adopted the abacus throughout their mathematics program (Barraga, 1974; Lewis, 1970).

Roy Brothers (1972), research specialist at the American Printing House, writes, "It would be a sad commentary if students were being deprived of an effective educational aid because trained personnel was not available to provide instruction and supervise its use."

Number Concepts and Then Computation

Computation should follow the development of number concepts in the primary grades. The numberaid (a type of abacus) is often used to introduce students to the concept of computation. The abacus is presented next, as early as possible, to insure adequate time to consolidate skills necessary for advanced levels (Nolan, 1974; Lewis, 1970). The numberaid and/or calculaid were shown to be the most effective computational devices for primary and early intermediate grades and the abacus for higher levels (Brothers, 1972).

The grade levels at which the transition is made varies. Resource teachers, in general, introduce the abacus in the lower elementary grades. A survey revealed that 20 residential schools begin training in the fourth and fifth grades, although one, the Tennessee School for the Blind, starts at the third grade level. At the Overbrook School for the Blind, where the math department was formerly headed by Dr. Mae Davidow, the abacus was introduced in the second grade and was also used to teach concepts; however, computation was not begun until number concepts were fully understood (Lewis, 1969; Hattendorf, 1971).

Since the use of the abacus is still a recent development, many schools are in the process of change or contemplating change. What about those students who haven't been introduced to the abacus in the lower grades?

Introducing the Abacus in the Later Grades

At the Perkins School for the Blind in 1963, 42 junior high students who had no previous knowledge of the abacus were given a concentrated eight-month abacus course involving the four basic operations. The improvement of these students was slow. Carson Nolan (1964) explains: "The *soroban* is not a device that can be simply picked up and used. A specific technique is required and development of skill in the use of the technique required time spent in practice and a knowledgeable instructor. Therefore, prospective users should not expect an immediate and radical improvement in computational ability."

Marion Lewis (1969) states, "Students already familiar with another method of calculation seem to learn the abacus more quickly if there is a learning period devoted to practice and drill on the abacus for each process, without being required to carry through on regular assignments on their grade level. Supervised practice is necessary for a while."

The introduction of the abacus in math classes becomes a motivating factor within itself. Students soon recognize the advantages of speed, portability, and ease of operation and become eager to learn and practice new skills (Gissoni, 1965; Lewis, 1970; Hattendorf, 1971).

To keep this interest alive, Lewis and Coker (1971) describe a variety of abacus contests that can be organized. Three contests are described in detail: the abacus bee, the intramural abacus contest, and a contest between abacus and print. They write: "Abacus contests were helpful in encouraging students to practice the use of the abacus and in creating more interest in it."

CRITERIA FOR A MATH AID Any practical arithmetic aid for the blind should have a few basic characteristics such as Gissoni described in 1962. His criteria were economy, portability, speed, accuracy, automatic operation, record keeping, and compatibility. The abacus satisfies all criteria except that of permanent record keeping. Results must be recorded elsewhere (Gissoni, 1963).

As early as 1955, Dr. Edward J. Waterhouse, director of the Perkins School for the Blind and a mathematician, said, "If any device for numerical calculations at elementary levels is ever designed to compete against the braillewriter, it will probably be some variety of an adapted abacus or *soroban*" (Hass, 1965).

Fred Gissoni compared the various computational aids available to determine which would be the most valuable vocationally. Besides the Cranmer abacus, the blind person's choices include mental calculations, the braillewriter ("a struggle with forward writing, back spacing, and line spacing"), or one of the arithmetic slates. Another alternative would be to let someone else do the calculations. Or, as is usually the case, he could just avoid areas that require arithmetic calculations. These means, which were the only ones available before the Cranmer abacus, "are awkward, cumbersome, slow, and mechanically inefficient" (Gissoni, 1962; 1963b).

Vocational Importance of the Abacus

The Cranmer abacus enables blind people to work more quickly and efficiently. Vocational significance is obvious—blind people need not avoid arithmetic computation areas because it is too time-consuming. For instance, students of electronics cannot escape arithmetic computation and the abacus can be an extremely valuable tool to them. Other blind people benefiting from the abacus in working situations include attorneys, engineers, chemists, tax consultants, computer workers, homemakers, and

> **"I can tell you that in my visits in schools and around the country, very few people are continuing to 'burden' children with type slates and other cumbersome, less meaningful types of computational devices." —Barraga**

vending-stand operators (Gissoni, 1962, 1963b; Hattendorf, 1971).

The first research study on the effectiveness of the abacus was conducted by Nolan and Morris in 1964. This study involved the 42 Perkins junior high students who took part in the concentrated eight-month abacus course referred to earlier. Prior to instruction, the students were tested with an easy test and a difficult test to determine whole number and decimal skills. Midway and at the end of the study, students were tested with equivalent tests. Final results showed a 66-percent increase in speed and accuracy.

Improvement did not seem to be related to intelligence, nor were the increases credited to normal acquisition of arithmetic skills. The student's greatest area of improvement was not on the overall mean achievement scores as tested by the Stanford Achievement Test. Their greatest increases (more than double that of the SAT) came on the more difficult items as tested by the Madden-Peak Computational Test. This would indicate that by being introduced to the abacus, a more sophisticated device, these blind students were able to function at a higher level of problem difficulty without necessarily increasing their basic knowledge of arithmetic (Nolan & Morris, 1964).

THE 1970 LEWIS STUDY

Lewis, in 1970, published the results of a study comparing means of computation ranking braillewriter, cubarithm slate, Taylor slate, abacus, braille slate, mental arithmetic, and others in order of use and value. Thirty-one residential schools and 43 public school programs responded. Ninety percent of the residential schools reported the use of the braillewriter and 87 percent the abacus. The overlapping indicates that the braillewriter is used to record partial answers from the abacus (Lewis, 1970). Brothers (1973) used 42 public school districts to assess achievement levels, to determine computational devices used, and to compare the relationship between the two. In the Lewis and in the Brothers studies, public school programs reported abacus use at 35 percent and 15 percent, respectively. Both studies indicated that the abacus has not received the acceptance in public school programs that it has in residential schools.

According to the Lewis (1970) study there are only a few schools that use the Taylor slate—residential, six percent and public, two percent. Five schools wrote "dropped" next to the Taylor slate. Brothers (1973) did not separate braillewriter, cubarithm, and type slate, but reported 70 percent use by pulic school students.

Other Aids Used in the Sighted Classroom

Brothers (1973) writes, "Admittedly the cubarithm board and braillewriter have a certain appeal for use in a predominantly sighted classroom. These devices allow the student to structure the problem to correspond with the written visual representation available to his classmates. However, strict adherence to such visually oriented procedures tends to ignore research which has supported the efficacy of the abacus as a computational aid."

Lewis (1970) listed the aids that blind students find of most value as Cranmer abacus, 40 percent; braillewriter, 35 percent; mental calculations, 20 percent; and Taylor slate, five percent. Since the abacus has been in use for only ten years, the evaluation indicates that educators are recognizing its value in relieving their students of much of the cumbersome apparatus used previously. This opinion is supported by Dr. Barraga's statement (Personal communication, 1974), "I can tell you that in my visits in schools and around the country, very few people are continuing to 'burden' children with type slates and other cumbersome, less meaningful types of computational devices."

The final part of the Lewis survey has to do with special problems in learning mathematics. One area mentioned in relationship to computation is the difficulty in setting up long problems and the length of time needed to obtain solutions. Several respondents wrote that problems in computation had been solved when their students learned how to use the Cranmer abacus. Concerning one teacher, it was found that "by using the abacus from lower elementary grades into high school, his students were functioning as well or better than sighted students in subjects such as physics, chemistry, and electronics" (Lewis, 1970).

The Brothers (1973) study showed achievement levels eight percent below the norm for braille students. Since the number of abaucs users was so limited, he could make no meaningful comparison of achievement scores and device groups.

THE 1972 BROTHERS STUDY

As has been stated earlier, blind students have consistently scored below the math norm on the Stanford Achievement Test. The results of the Nolan (1959) study, indicating significant differences in achievement in different schools and the research by Lewis (1970), reported above, led Brothers (1972) to investigate the possibility that methods and computational devices used by individual schools and students may be responsible for differences in achievement scores. This study was threefold and sought 1) to determine the current achievement level of braille students in arithmetic computation; 2) to compare the results of 1959 with 1972; and 3) to explore achievement scores in relationship to the type of computational device or strategy used by braille students. Twelve residential schools were used. Eight had participated in 1959; grade levels included the third, fourth, sixth, and eighth. It was found that achievement levels were consistently below those of 1959. It was suggested, however, that the reason for this was the fact that the caliber of residential school students in 1972 was not comparable to those enrolled in 1959.

In comparing the number of problems attempted, the 1972 group completed more problems than the 1959 group. This increase was attributed to the fact that more students used the abacus, which was not available in 1959.

The categories used to compare the computational devices, combination of devices, and other problem-solving strategies included: mental arithmetic; numberaid; braillewriter; Cranmer abacus; Cranmer abacus and other devices; numberaid and/or the calculaid; braillewriter plus other devices; and "other devices" (Taylor slate, cubarithm, pencil-and-paper, sticks). While the average achievement was lower than the 1959 study, a further exploration into individual school achievement scores in relation to computational devices used showed the following results.

Achievement scores of students using the numberaid and/or calculaid were higher for all other device groups at the third and fourth grade levels. Data indicated that, once introduced to the abacus, the rate of achievement was greater than any other group. Forty-three percent of the students in the eighth grade who used the abacus achieved at or above the expected grade score of 8.2.

ACHIEVEMENT SCORES AND I.Q. In classifying groups according to I.Q., the eighth grade group with the lowest mean I.Q. achieved higher scores using the abacus, either by itself or with other devices than two other groups with higher mean I.Q.'s who used either mental arithmetic, the braillewriter, or the braillewriter and other devices.

Mental arithmetic and the braillewriter seemed to be adequate at the primary and early intermediate grades, but not at advanced levels. Achievement levels dropped sharply for these devices as grade levels and complexity of problems increased. Brothers' public school study, where only a 15-percent rate of use for the abacus was reported, showed that achievement levels also dropped more as grade levels increased. He notes that one may be hesitant to introduce a new device when performance appears adequate; but the ever-increasing complexity of computation should be considered (Brothers, 1972, 1973).

Scores and Problem Complexity

In 1959, Nolan found that the lowest achievement levels were in the areas where the complexity of operation increased. These areas were: 1) Grade 3.2—carrying from units to ten's in addition and subtraction, and adding or subtracting with numbers of more than two digits; 2) Grade 4.2—adding more than two numbers when each number has more than two digits, subtracting numbers with more than two digits, and dividing and multiplying numbers with more than one digit; 3) Grade 6.2—fractional operations and decimal operations; and 4) Grade 8.2—interest type problems and negative numbers.

The highest percentage of students using the braillewriter was at the eighth grade level, with the lower grades placing less emphasis on this device (Brothers, 1972). Brothers sees this as a promising trend since "the results suggest that any one of several devices would be superior to the use of the braillewriter at any of the four levels." The same trend was evident in Brothers' (1973) study involving public schools.

Computational devices that were linked together under "other devices" (Taylor slate, cubarithm, pencil and paper, sticks) followed the trend of being sufficient at lower levels but, again, inadequate as complexity increased. At the third grade level, mean achievement scores were 2.08, while at the eighth grade level they were 4.5 (Brothers, 1973). These results seem to verify Carson Nolan's opinion that "the type slate is a poor computational tool" (Personal communication, April 1974).

Brothers concludes that arithmetic computation remains a very critical area, but positive alternatives are available to educators: 1) using the numberaid and other concrete devices at the third and fourth grade levels; 2) providing the opportunity for students to become proficient with the abacus by the end of the sixth grade; and 3) placing much less emphasis on the braillewriter.

MORE THAN ONE AID IS NEEDED No one seems to advocate only one computational tool. According to Natalie Barraga, "Many tangible aids may need to be used . . . abacus computation may not be appropriate for all children, especially those who may be functioning at levels below average intelligence" (Personal communication, April 1974). Recent research does back the effectiveness of the abacus for all students who will pursue academic programs.

The need for further research has been suggested in the following areas: 1) appropriate grade level for abacus instruction; 2) techniques in manipulation of beads; 3) time requirements in attaining basic process proficiency; 4) accuracy with decimal problems; 5) abacus competition on an intraschool and interschool basis; and 6) need for programmed instruction (Brothers, 1972).

The need for programmed instruction is already being met; Nolan reports that a cassette program for abacus instruction is being developed at the American Printing House for the Blind (Personal communication, April 1974).

The Cranmer abacus has proven itself to be superior as a computational tool to aids such as the braillewriter and the type slate in accuracy, speed, and portability. There is a definite need for more thorough teacher training programs. Lack of understanding by teachers has hindered the wider use of the abacus, particularly in public school programs. Proper introduction and instruction in the use of the abacus could make it as important a basic skill for blind persons to learn as braille.

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(Continued on page 417)

The Case of Mr. K.: Rehabilitation Vs. Institutionalization

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Abstract: *The author uses the case history of David K., a 65-year-old blind man who came to the Center for Independent Living from a state psychiatric hospital, to illustrate the problem of blind persons confined to mental institutions merely because they have not been taught the skills for living in a sighted world and because no one is concerned enough to get them out of the hospitals and into rehabilitation programs. She also points out that it costs the government considerably less to pay for rehabilitation than to hospitalize someone for a period of years.*

■ The focus of this study is the case history of David K., a 65-year-old blind man who came to the Center for Independent Living (CIL) from a state psychiatric hospital where he had been institutionalized for two-and-one-half years and had undergone a number of humiliating and degrading experiences. As his social worker, I believe that his progress at the CIL would seem to indicate that, aside from his visual loss, his faculties were still very much intact, and I cite his case to illustrate a problem about which we at the CIL are very much concerned: that is, that if one such person can exist within a mental hospital, confined there primarily because of his blindness, it is probable that other such people are being incarcerated for a similar reason. By presenting this case it is my hope to encourage the many agencies that work with the blind to begin offering more in the way of rehabilitation services to the blind in mental institutions.

Mr. K. was born in Brooklyn, New York in 1910. He came from a large family—three brothers and two sisters. He attended school until the eighth grade when he quit to look for employment. He has held a variety of jobs such as short order cook, salesman, and store owner and spent several years in the Merchant Marines. Mr. K. has been married three times; the last two were dissolved because his wives could not cope with his vision loss. His anger and frustration, due to the hostile reaction of his most recent wife, provoked Mr. K. to wreak havoc in the candy store he then owned. Deeming him "crazy," Mrs. K. consented to his being admitted to a nearby hospital for psychiatric observation. After one month, he was taken, on his wife's request, to a psychiatric instution.

STAYING IN INSTITUTION A NIGHTMARE

Mr. K.'s nine-month stay at the institution was one of the worst periods in his life. He found that he was surrounded by people suffering from all kinds of psychological disturbances. This type of experience would be upsetting to anyone, but for someone who is unable to see, it is doubly frightening. For example, patients would sneak up on him and steal his personal possessions. During meals, food would be taken from his plate, and there was never anyone around to check this kind of behavior. Even the seemingly simple need of having to go to the bathroom became an ordeal. He would ask someone to show him where it was, but more often than not, he would be ignored. The aides were not much better than the inmates. They seemed to feel that the extra attention required for a blind patient was not within their normal daily duties. On the rare occasions when they did agree to help in some way or other, they would push and shove him, make rude remarks, and in a number of other ways register their disdain.

Mr. K. became increasingly hostile, while at the same time, he withdrew further into himself, cutting off contact with the outside world as much as possible. At the end of nine months, he was informed that he could leave the hospital providing that he would sign his store and house over to his wife, thereby avoiding any future repetition of his past behavior. (The legality of this action is presently being decided in the courts.)

Mr. K. was released from the hospital into the custody of a foster family. However, they had no more understanding of what Mr. K. was going through than did his wife or family. They treated him as though he were totally incompetent rather than merely blind. They refused to let him move around the house alone and would not let him shower. Mr. K.

became increasingly more agitated and after two months, he was re-hospitalized at yet another psychiatric state hospital.

His experiences here were very much like those at the former institution. If anything, he received even more man-handling, suffering a broken arm and badly bruised spine, both of which were the result of an aide's displeasure at Mr. K.'s asking for such things as a light for his cirgarette or escort to the bathroom.

For most of his hospitalization, he was left pretty much alone. Occasionally, one of the social workers would try to talk with him, but his hostility and angry withdrawal would soon discourage them. Indeed he might have remained at the hospital indefinitely had it not been for the persistance of one social worker, Mr. M., who refused to be discouraged. He persisted even after Mr. K. punched him and insisted that he would rather be left alone. Mr. M. realized that the only way to convince Mr. K. of his sincerity in wanting to help was to presevere. Mr. K. finally relented and they developed a fairly close, meaningful relationship. It was through Mr. M. that Mr. K. learned about the State Commission for the Visually Handicapped.

Referral From the State Commission

The state agency felt that the Center for Independent Living would be the best place for him to learn how to cope with his blindness and with the sighted world. Mr. M. made all of the necessary arrangements and gave Mr. K. the moral support and constant reassurance that he needed to enable him to make the necessary transition from the hospital to the outside world.

When Mr. K. first arrived at the Center for Independent Living, he was quiet, withdrawn, frightened, and not at all sure that he would be able to learn how to live in the sighted world. His only physical limitations, aside from his blindness, were poor circulation in his legs and some arthritis, both of which had been aggravated by the enforced inactivity of the past two-and-one-half years. Thus, in spite of his uncertainty, he decided to take most of the educational courses offered at the Center: script, activities of daily living, mobility, sensory development, grooming and braille. His progress was surprisingly fast. He completed script within a month and as he began to relearn old skills and become proficient in new ones, his self-confidence began to return.

In addition to the above areas of instruction, he saw a social worker twice a week. These sessions gave him the opportunity to discuss his feelings about the past, present, and future. At first, he would only talk about the present, but as his relationship with the social worker developed, he began to discuss the past and to consider the future. As his fear of re-hospitalization faded and his skills developed, he became more open and relaxed. He had a wry sense of humor, and in spite of all that had happened to him, he was still able to laugh at himself. He enjoyed his classes and his teachers enjoyed him. He was also very popular with his fellow students.

DIFFICULTY WITH MOBILITY His most difficult course was mobility. In the beginning, he found walking extremely painful and tiring. He was ready to stop after a couple of hundred feet. He kept at it, however, and as the course progressed, he found that he could go further and further without too much discomfort. This change was due not only to an increase in his physical stamina, but also to a change in his overall outlook on life, generally, and on himself particularly.

After M. K. had been at CIL for about three months, he began to talk about what he was going to do upon leaving. Obviously, he could not and *would* not return to his wife, and the thought of moving in with either of his sisters who had helped to have him committed was repugnant to him. He considered the idea of renting his own apartment but his limited funds made this idea impractical. When we looked into health-related facilities and diphtha homes, he finally decided on the latter. (In a diphtha home, one is usually served at least two meals a day and one is free to go and come as one pleases.)

There was, however, some difficulty here also. Most facilities are reluctant to admit someone who is not only blind, but who has a history of mental illness as well. Nevertheless, after much hard work and anxiety on the part of the staff, CIL finally did locate a facility. One of the chief selling points for his admittance was Mr. K. himself. He was aware that like it or not, fair or not, he had two strikes against him from the beginning. He knew that it was his job to prove that he would be able to manage as well as anyone else.

As of the time of this study, Mr. K. has been living on his own for five months. He has already made many friends and is enjoying his freedom. With the help of the State Commission for the Visually Handicapped, he was enrolled in the home industry training program. He likes to keep busy and he says that although the pay is not very good, it does help provide him with cigarettes. His only complaint about his living arrangements is that all of the women are in their seventies and this rather limits his romantic inclinations!

Having acted as Mr. K.'s social worker during his five months at CIL, I find the thought of his having been in a mental institution is all but inconceivable. Even more appalling is the thought that had it not been for the persistence of Mr. M., Mr. K. might still be in the hospital. It makes one wonder how many other Mr. K.'s there are confined in institutions merely because there is no one interested or caring enough to get them out.

Rehabilitation Vs. Institutionalization

Another point to consider is the comparative costs of a rehabilitation program (be it four, five, or even six months) and continued hospitalization. The entire cost of Mr. K.'s rehabilitation totaled approximately $6,000, while hospitalization runs about $10,000 or more per year. At that rate, another 20 years of in-patient psychiatric care would have cost New York State at least $200,000. The facts and figures clearly show that restoration of those blind patients in mental hospitals to independence and self-sufficiency is the most efficient, least expensive and, by far, the most productive use of resources.

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Programmed Instruction in Orientation and Mobility for Multiply Impaired Blind Children

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Abstract: *In a pilot study made to determine the feasibility of programmed instruction in orientation and mobility with teachers of multiply impaired blind children, a scale was developed to identify skills needed for the development of a systematic program of instruction. Programmatic instruction was developed for each identified skill and field-tested by five teachers of multiply impaired blind children during a 15-week period. Results showing significant gains in performance scores for a group of six multiply impaired blind children led to the conclusion that programmed instruction in orientation and mobility was of value. A need for further research was indicated.*

▪ Teacher training programs in special education are just beginning to prepare personnel to deal with the problems of orientation and mobility for multiply impaired blind children. It is difficult to prepare teachers to teach in an area about which so little is known. The identification of orientation and mobility skills needed by multiply handicapped children is a necessity in the development of a program of systematic instruction.

The importance of orientation and mobility for multiply impaired children has been emphasized in the literature. In order for the normal sequence of development to occur, the young infant needs to explore his environment. Moore (1970) found that short-term instruction was effective in developing orientation, mobility, social competency, and body awareness skills in preschool multiply impaired children. Case studies by Seelye and Thomas (1966) indicate that orientation and mobility instruction during school age can improve the ability of the multiply impaired child to move within his environment.

REVIEW OF THE LITERATURE

Although much has been written concerning the importance of daily living skills to the visually impaired child, very little research can be found concerning the most effective methods of teaching these skills. Task analysis and programmed instruction have been useful in teaching a child how to tie a shoe or wash his hands. Hart (1971) designed a manual to help parents and teachers in the development of self-help skills in multiply impaired children. The systematic sequential steps in the teaching of basic skills in eating, dressing, toileting, and grooming are outlined in detail. Evaluation of behavior for each skill is provided by extensive checklists, with a rating scale for each task.

Scales have been developed to measure orientation and mobility components in young blind children. Lord (1969), using 173 visually impaired children ages three to 12, standardized a scale for appraisal of skills in areas such as: 1) self-help skills in relation to travel; 2) formal pre-cane orientation and mobility skills; 3) movement in space; 4) use of sensory cues in travel; 5) use of direction and making turns. This scale could be very useful in planning an individual program in orientation and mobility for a young visually impaired child. Guldager (1970) designed a body image scale for multiply handicapped rubella children based on the child's abilities to imitate body movement and to demonstrate object concepts based on the theories and observations of Jean Piaget.

Programmed instruction and precision teaching have apparently been sweeping the country in special education, but very little research or actual practice using operant conditioning techniques has been reported in the literature in relation to multiply impaired blind children. Larsen (1970) suggested the use of operant techniques in sensory assessment. Hart (1969) reported using behavior modification and programmed instruction for young multiply impaired children of ages three to nine years in a pilot study emphasizing self-help skills, motor skills, language and speech skills, and adaptive behavior. Bricker and Bricker (1970) described a sequence of language training procedures for the severely language and mentally handicapped child using behavior modification techniques.

Larsen and Bricker (1968) developed a manual for parents and teachers of severely and moderately retarded young children in which behavior modification principles and methods for those low-functioning children are applied to deaf and visually impaired children. The manual is divided into two parts, the first oriented toward behavior modification and the second toward programmed activities such as pulling on socks, brushing teeth, eating correctly, and toilet training.

This study represents an effort by a teacher-trainer, a mobility specialist, special consultants, and classroom teachers to develop a manual which included activities appropriate to teaching skills in orientation and mobility to low-functioning multiply handicapped blind children.

In a pilot study to investigate the feasibility of programmed instruction in orientation and mobility with teachers of multiply impaired blind children, a scale was developed to identify and measure the skills needed for the development of a systematic program of instruction. A program of activities for teaching each identified skill was incorporated into a manual. The experimenters hypothesized gains on posttest performance scores for the group of multiply impaired blind children.

PEABODY MOBILITY SCALE

The Peabody Mobility Scale (PMS) was developed specifically for the pilot study and used for assessment, programming, and evaluation. The PMS encompasses four major areas: locomotion, sensory development, concept development, and mobility.

Each area has a number of subscales arranged, for the most part, in developmental sequence. The subscales are scored numerically using zero for clearly failed, one point for partially passed (if the skill is in a transitional or emergent state), and two points for clearly passed. The subscale scores produce a subtotal for each area and a global score for the entire scale.

The scale consists of 27 subscales which incorporate 111 specific items. The subscales may be grouped as follows:

1. Locomotion Skills—ten subscales, 42 items. Basic movement, creeping, standing, walking, ascending stairway, descending stairway, running, jumping, hopping, and climbing.
2. Sensory Training—five subscales, 19 items. Sound localization, tactual discrimination with hands, tactual discrimination with feet, visual discrimination and olfactory discrimination.
3. Concept Development—seven subscales, 27 items. Body parts, front-back, up-down, left-right, turns, shapes, sizes, and organization.
4. Mobility Skills—five subscales, 23 items. Sighted guide, seating, trailing, protective skills, and route travel.

Two Samples of Subscales

The structure of two representative subscales, "Organization" and "Trailing," is outlined below illustrating how the items are arranged in an order which approximates the developmental sequence.

1. The child removes the spoon from the bowl and places it on the table. He replaces the spoon in the bowl.
2. The child removes the spoon and fork from the bowl and plate. He replaces them in the bowl and plate.
3. The child removes the spoon, fork, and knife from the bowl, plate, and saucer. He replaces the silverware in the correct dishes.
4. The child examines the position of the spoon, fork, and knife in the bowl, plate, and saucer. They are removed and placed in reverse order in front of the dishes. The child replaces them in the original order.

1. The child uses any method to follow a wall.
2. He uses his hand at the appropriate height.
3. He uses his hand and fingers in the appropriate position.
4. He trails efficiently, discovering and avoiding hazards.
5. He crosses open areas (doorways) and continues his route without losing orientation.

Inter-rater reliability was computed from ratings of the two observers. The ratings were made simultaneously, and independently while the children were being examined on the pre- and posttests using the PMS. Inter-rater agreement averaged 91 percent.

Programmatic instruction was designed for each item in the subscales. Each lesson was divided according to the purpose, task objective, materials needed, pretest, and suggested educational program. Enrichment activities were listed at the end of many of the lessons not only to provide variation but to insure sufficient practice to obtain the desired skill. Each lesson was programmed in small sequential steps and flow charts were diagrammed with directions to the teacher showing when to give commands, when to reinforce, when to repeat cycles, and when to proceed to the next step. For example, the suggested educational programs for the lesson Tactual Discrimination with the Feet is outlined in nine steps:

A TYPICAL LESSON

"Before introducing this item the child should complete Sensory Activity IIIB, Tactual Discrimination with the Hands. Use a thick rug for the initial activity.

"1. Tell the child that he is going to learn how to use his feet to find his way from one place to another in his house or school. Show him the difference in textures of a rug and a smooth tile or wood floor. Show him with his hands, and then with his feet. (Have him remove his shoes and socks.)

"2. Have the child stand on a rug. Let him feel it with his hands. Tell the child the material is 'soft.' Have him feel the rug with his feet.

"3. Say, 'Step on the rug! Step on the soft place!' Guide his hands to the rug so that he can determine its location. Guide him to step on the rug. Reward him and record as prompt.

"4. Repeat step 3 without prompt. If failure occurs, repeat with prompt and again without prompt. Use the shaping program if failure still occurs.

"5. Have the child start this step from a position near the edge of the rug. Say, 'Step on the floor! Step on the smooth, hard place!' Guide his hands to the floor so that he can determine its location. Guide him to step on the floor so that he can determine its location. Guide him to step on the floor. Reward him and record as prompt.

"6. Repeat step 5 without prompt. If failure occurs, repeat with prompt and again without prompt. Use the shaping program if failure still occurs.

"7. Repeat the task alternately asking the child to step on the rug and to step on the floor. Make sure that he does the task correctly at least 10 of 12 trials. If successful, go to next step.

"8. Continue with two other floor surfaces that are more alike in texture such as tile and wood or tile and cement. Follow the same procedure as in steps 2 to 7.

"9. Have the child go to an outdoor area and learn to distinguish between grass and concrete, grass and asphalt, or

Subject	Chronological Age	Visual Acuity*	Additional Handicaps	Cause of Blindness	Scores	
					Pre	Post
1	11–2	MO	Developmentally delayed	Optic atrophy	127	135
2	6–4	LP	Developmentally delayed	Macular aphasia	96	114
3	10–8	LP	Developmentally delayed	Unknown	109	104
4	11–7	TB	Developmentally delayed	Unknown	80	74
5	8–1	MO	Orthopedically handicapped; hearing impaired	Optic atrophy	90	106
6	10–11	TB	Developmentally delayed	Unknown	63	76
7	6–4	TB	Developmentally delayed	Anophthalmus	—	—
8	7–4	TB	Developmentally delayed	Optic atrophy	—	—
9	4–9	LP	Developmentally delayed	Lack of nerve development	—	—

*MO = moving objects; LP = light perception; TB = total blindness.

Table 1. Demographic Information on the Nine Subjects and Pre- and Posttest Results

grass and dirt surfaces. Follow the same procedure as outlined in steps 2 to 7.

"After he has learned to detect the different kinds of surfaces by stepping from one area to another, take him on a route to see if he can tell correctly when he is changing from one surface to another. Try traveling over two grossly different surfaces first, such as grass-cement. Later try him on more difficult surfaces such as dirt-cement, and then even on more difficult surfaces such as dirt-asphalt. In order to complete this program successfully the child should be able to indicate without difficulty each time he travels from one kind of surface to another."

Sample evaluation forms were designed in detail, where appropriate, to show how to measure the progress of the child with pretests and posttests.

The subjects in this study were multiply impaired blind children with special mobility problems who were selected from the Tennessee School for the Blind, Cloverbottom Hospital and School, St. Bernard Academy, and a public school program located in the Experimental School of the John F. Kennedy Center for Human Development at George Peabody College. There were five girls and four boys in the group. The nine multiply handicapped children ranged in age from four to 11 and were all severely visually impaired. One child was non-ambulatory and traveled in a wheelchair. He also had a hearing impairment. All of the remaining children were developmentally delayed in speech and language. Three children were severely handicapped in expressive speech and language, but all of the children had sufficient receptive language ability to carry out simple commands.

The children were selected primarily on the basis of availability for the pilot study, since a population of this type has a low prevalence in a small geographical area. The guidelines for subject selection included: 1) functions nonvisually in the environment; 2) possesses at least one other handicap in addition to blindness; 3) makes positive re-

Test Condition	Mean	SD	t
Pretest	94.17	22.31	
Posttest	101.50	23.29	
Difference	7.33	10.50	1.713*

* Significant at the .10 level of confidence.

Table 2. Summary Statistics for Test Conditions

sponses to simple commands; 4) functions at the preschool level. Table 1 summarizes the developmental characteristics of the subjects.

TEACHER PARTICIPATION

A pretest using the PMS was administered to all nine subjects and profiles of abilities were charted for each child according to the results of the subscales. Specific approaches for the teachers were outlined based on the profiles. These individualized instructional programs were implemented by the children's classroom teachers over a 15-week intervention period. The five head teachers and their assistants participated in a special introductory meeting at the beginning of the project and were supervised individually by project staff members over the entire period. Teachers were asked to keep a daily log and to make weekly evaluations of activities used with each child. Near the completion of the training period, teachers were invited to a second meeting with the project staff to discuss problems, share ideas, and make recommendations. The recommenations were recorded, to be used in future revision of the manual.

PRETEST-POSTTEST RESULTS

Table 1 contains the pre- and posttest scores attained by six of the nine subjects on the PMS, and Table 2 presents the descriptive summary statistics computed on this test data. A posttest using the PMS was administered to the subjects at the end of the 15-week intervention period. Two of the subjects were not present at the end of the intervention period, making them unavailable for the posttesting. A third subject was not included in the final analysis because of a change in teachers during the intervention period. The scores in Table 1 represent the total credits earned by each subject on all items administered from the PMS and may be interpreted as an index of a subject's overall achievement in the skills necessary for independent mobility. The scores do not show strengths or weaknesses in specific skills (the area profiles do show performance in each subscale of the test). The highest possible score on the PMS is 222. A child achieving at or near this score would be expected to demonstrate proficiency in orientation and travel skills.

Examination of the pre- and posttest data reported in Tables 1 and 2 reveals that all of the subjects in the present study demonstrated low achievement in orientation and mobility. Considerable variability between subjects in level of skill development is evidenced by the pre- and posttest standard deviations of 22.31 and 23.29 respectively. Similarly, each subject's score profile showed extensive intra-subject variability, with definite strengths and weaknesses on particular skills.

Comparison of the pre- and posttest scores of Subjects 1, 2, 5, and 6 indicates improved performance following intervention. Table 3 presents the pre- and posttest performances of Subject 5 on locomotor and concept skills, and Subject 6 on sensory and mobility activities. These two subjects exemplify the diversity of impairments that may be encountered in the multiply impaired blind population, and the four categories of behavior and their respective subskills define the content of the PMS and the intervention program.

Subject	*Category and Items*	*Possible*	*Pretest*	*Posttest*
5	I. Locomotor			
	Basic movement	8	8	8
	Creeping	6	6	6
	Standing	8	4	4
	Walking	10	2	3
	Ascending stairs	8	4	5
	Descending stairs	8	4	7
	Running	10	—*	—
	Jumping	8	—	—
	Hopping	8	—	—
	Climbing	10	—	—
	III. Basic Concepts			
	Body parts	6	6	6
	Front-back, up-down	8	5	8
	Left-right	10	2	6
	Turns	6	5	6
	Shapes	8	8	8
	Sizes	8	8	7
	Organization	8	8	8
6	II. Sensory Skills			
	Sound localization	6	4	6
	Tactual discrimination	8	0	2
	Tactual discrimination (feet)	8	0	4
	Visual discrimination	8	—	—
	Olfactory discrimination	8	0	0
	IV. Mobility Skills			
	Sighted guide	10	0	4
	Seating	10	10	8
	Trailing	10	4	4
	Protective skills	8	0	2
	Route travel	8	5	5

* Dashes indicate that the particular skill was judged inappropriate for the subject.

Table 3. Excerpts of Performance Profiles of Subjects 5 and 6 on the Four Behavioral Categories of the Training Program

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SUBJECT 5 AND SUBJECT 6 Comparison of locomotor and concept pre- and posttest data for Subject 5 indicates posttest improvement in the motor skills of creeping and descending stairs, and the orientation concepts of up-down, front-back, and left-right. Similar improvement is indicated in the postintervention data of Subject 6 on sensory and basic mobility skills. This subject evidenced improvement on all targeted sensory skills with the exception of olfactory discrimination. Subject 6's proficiency in the mobility skills of travel with a sighted guide, and protective techniques increased following the training activities. Performance on the remaining mobility skills was unchanged following intervention, with the exception of seating, which decreased. For purely descriptive purposes, the mean difference between the pre- and posttest conditions based on the scores of all subjects was analyzed using a t test for correlated observations (Winer, 1971). The resulting t value of 1.713 was significant at the $p = .10$ level (one-tailed test), leading to rejection of the null hypothesis of no difference between pre- and posttest scores, and tentative acceptance of the experimenters' alternative hypothesis of improved posttest performance as a result of the intervention program.

DISCUSSION OF THE RESULTS The results of the pilot study tentatively supported the hypothesis of the experimenters and fulfilled the purposes of the investigation which was to test the feasibility of the programmed instruction in orientation and mobility with low-functioning blind children. The findings must be generalized cautiously. First, the small size of the sample, while representing a considerable diversity of impairments, does not include all of the handicaps or constellations of impairments occurring in multiply impaired blind children. Second, the limited availability of appropriate subjects in any confined geographical area, makes the selection of a truly random sample difficult. These limitations restrict the statistical inferences which may be drawn on the basis of the results.

Two subjects attained lower scores on the PMS following the intervention program for which there are four possible explanations. First, the decreased scores may be an artifact of the PMS, rather than the behavior of the subjects. Error in the form of test-retest unreliability could have accounted for the lower scores. Second, the pretest scores of these two subjects may have been spuriously high due to their fortuitously successful performance on several scale items. Third, the subjects may have been insufficiently motivated to perform at their optimal level during the posttesting. Fourth, the lower posttest scores could be due to a failure of the classroom teachers to maintain existing behaviors of the subjects while building new responses. The last explanation seems most plausible as suggested by the individual score profiles of the subjects. Posttest-score decreases tended to occur in skills which were at a high proficiency level on the pretest and subsequently were not targets for intervention.

Conclusions

The following points emerged as the most important conclusions from the pilot study:

1. The identification of gains among the subjects indicated that programmatic instruction in orientation and mobility may be feasible for use by teachers of multiply impaired blind children.
2. The development of a scale in orientation and mobility for use with low-functioning multiply handicapped blind children seemed to be helpful in diagnosing particular weaknesses which need instruction.
3. The instructional program used in this study should be helpful in designing prescriptive programs of instruction for similar children.
4. Further research with a larger sample using experimental and control groups is warranted.

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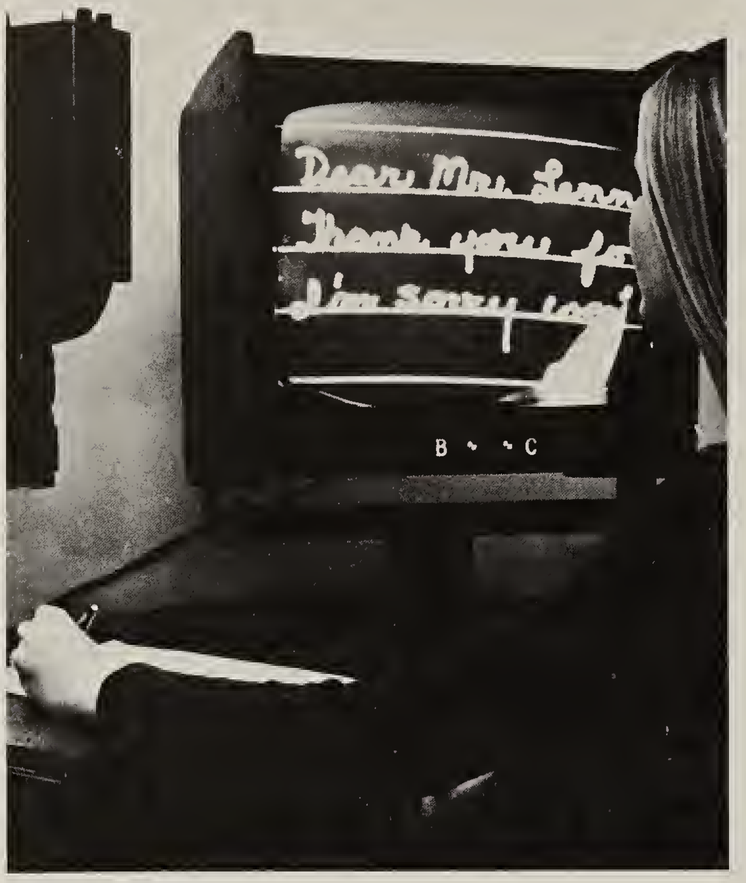
International Literary Braille Competition

A Japanese acupuncturist and a young American ex-convict were among a group of writers who received $1000 in the International Literary Braille Competition sponsored by the Jewish Braille Institute of America, New York City. The contest, which is only open to blind writers, was first held in 1941 with Eleanor Roosevelt as one of its sponsors.

The winner of the first prize for fiction was Akira Kato, a 56-year-old acupuncturist and masseur from Japan, for his short story, "The Parcel Wrapped in Lotus Leaves." William Isaacs, a recently paroled ex-convict, won first prize in the non-fiction category for his article, "Quo Vadis, Roberto Serna?" The article deals with prison officials' inhumane treatment of an epileptic inmate of a California jail.

The last international literary contest was held in 1958. The long interval between contests was because of the large expenses involved in translating the authors' writing into English.



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A. Total No. Copies Printed	4,238	4,028
B. Paid Circulation		
1. Sales Through Dealers and Carriers, Street Vendors and Counter Sales	0	0
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I certify that the statements made by me above are correct and complete. (Signed) Mary Ellen Mulholland, Managing Editor.

Letter to the Editors

To the Editors:

The January 1975 issue of *The New Outlook for the Blind* contained a review by this writer of a film called, "A Matter of Inconvenience," which portrayed how motivation and innovation enable amputees and blind individuals to participate in the sport of skiing. The review commended the producer for their treatment of the amputees and rebuked them for the negative image of a blind skier.

Having been sensitized by this review, an article in United Airlines' *Mainliner* magazine caught my eye. This article referred to a film entitled, "The Bold Challenge," produced by BOLD (Blind Outdoor Leisure Development) and I was prompted to request an opportunity to see it. The BOLD staff provided me with a copy of their new film which, incidentally, won a special award at the International Ski Film Festival in New York, October, 1974. I am delighted to say that this film makes a real contribution to the field of service to the blind and visually impaired.

BOLD is an organization founded by Jean Eymere, a ski racer and instructor, who became blind four years ago. Jean was not one to give up skiing. Friends and instructors in the Aspen area helped him relearn skiing as a blind person. They tried beepers, poles, and radios, but the group realized that skiing with a buddy who was constantly talking and giving encouragement was the only way to go. Through the efforts of Jean and his friends and the support of the Aspen Lions Club, Aspen BOLD was born five years ago. Since then, BOLD has gone nationwide, helping local chapters organize and encouraging blind skiers to hit the slopes.

"The Bold Challenge" is a movie developed to show to clubs and groups across the country who are interested in the blind and skiing as a method of encouraging and gaining support for the development of local blind skiing clubs. The film tells its message well. It approaches the art of skiing in a very professional and educational manner. It describes the basic requirements for becoming a successful skier. It takes the viewer through the process of training instructors as well as the orientation of prospective blind skiers and the step-by-step educational methodology that is used so successfully. The viewer has an opportunity to follow individual skiers through the process of learning to the point where they become competent skiers and can participate fully in the joy of the sport.

Although the film's original purpose is to encourage the development of local clubs of blind skiers, the very professional approach taken to describe teaching techniques, psychological factors, special safety precautions and sequential learning makes the film an excellent teaching tool for classroom teachers, rehabilitation centers and teacher in-service training programs. The innovative approaches for developing sensory input during the teaching process has application to other subject matter. The four remaining senses are utilized to the fullest in helping the motivated and talented visually impaired individual master a difficult but rewarding sport.

It is this writer's opinion that the film would have general public and educational interest as well as to those groups who are specifically interested in skiing. It is of value as a case study for the teacher preparation programs preparing individuals to work with the visually impaired. Finally, and most importantly, it projects a very positive image of the visually impaired individual. The film well deserved the special award from the International Ski Film Festival.

Dr. Douglas Inkster, Director
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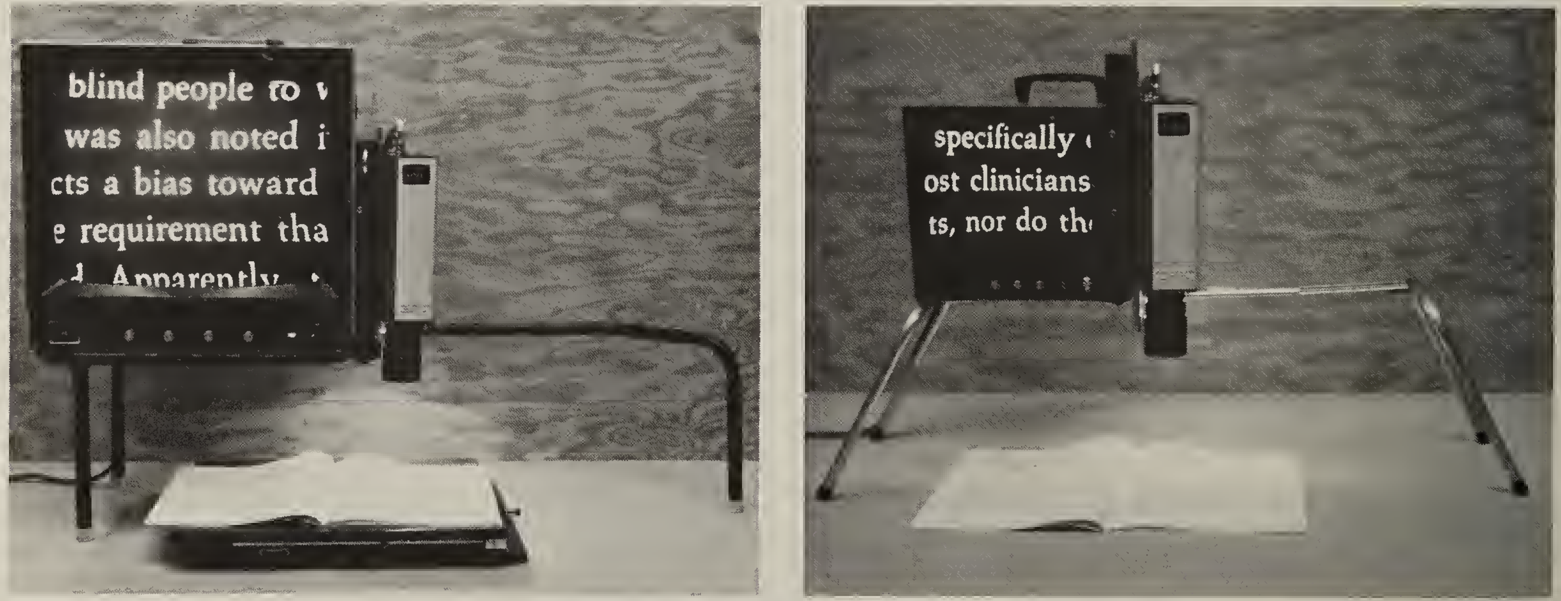

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Review

If You Could See What I Hear, by Tom Sullivan with Derek Gill, New York: Harper and Row, 1975. 184 pp. $7.95

Reviewed by Arthur Zigouras

There are books or documentaries or articles about blind people which invoke a "Gee Whiz" response from a sighted audience. The gee-whiz-isn't-it-wonderful-a-blind-person-can-do-that feeling runs through *If You Could See What I Hear,* written by Tom Sullivan with Derek Gill. But it's a good gee-whiz biography, and not one which can be dismissed easily as being too light.

Tom (the reader feels on a first name basis with him immediately) has retrolental fibroplasia, and writes a witty, warm book about his life as a blind person. He can poke fun at his blindness by relating stories of how he takes advantage of it. He tells of an episode when he won a wrestling match by the simple trick of taking out his artificial eye in front of his opponent just before the match.

He also describes his strong feelings about Perkins and Harvard, and how both schools of learning affected his outlook on life. His feelings toward Perkins are ambivalent. He learned a great deal there, but felt imprisoned. His feelings toward Harvard are simple—he hated it. The reader can't blame him, though; he was treated as a pariah, an outcast at Harvard.

He talks about his parents with a great deal of insight, and about their handling of his blindness. His mother made sure that he had none of the "blindisms" that congenitally blind children often display, and that he developed social graces and good table manners. His father would invent ball games and play patiently with his son for hours and hours. But, at times, their personal problems overwhelm him.

Tom writes with wit, warmth, and a touch of melodrama which adds to the gee-whiz quality. I think he does it in order to grab his reader's attention, and he does grab it quickly when he begins the book with a description of how he rescued his daughter from drowning.

His writing about his love affair is at times a bit too soap-operaish and, at his wife's sorority engagement party, he didn't have an engagement ring but sentimentally asked their permission to marry her. It comes off calculating and somewhat cold. He isn't cold when he tells of his feelings for his father, an irrepressible man with all the stereotypical male attitudes toward women, sports, and the like. He loves, hates, loves, rehates his father throughout the book and these passages are hard-hitting and the best.

His writing about blindness, for me, is aimed at the sighted audience who has had no experience with a blind person; this seems to elicit that gee-whiz response. It's a good book in that many people will like it, read it, and, it is hoped, get a better understanding of blind people.

Mr. Zigouras is director of the Public Education Division, American Foundation for the Blind, New York City.

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Elaine Siegel, librarian.

Normal and Abnormal Vision; A Course in Programmed Instruction. American Optical Corporation, Optical Products Division (Southbridge, Massachusetts 01550), 1972, 86p. Illus. $1.50. This book is part of a four-volume set in programmed instruction format. Sections of this volume include visual acuity, abnormalities in the globe, correction of refractive errors, muscle imbalances, and pathological conditions. The other books comprising the set are: *Basic Optical Concepts, The Human Eye,* and *Lenses, Prisms, and Mirrors.*

Geriatric Ophthalmic Dispensing, by Margaret Dowaliby. *American Journal of Optometry & Physiological Optics* (The Professional Press, Inc., Publishers, 6th Floor, 101 E. Ontario Street, Chicago, Illinois 60611), Vol. 56, No. 6, June 1975, pp. 422–427. An optometrist discusses prescribing for low vision and aphakic geriatric patients. Particular consideration is given to the comfort and cosmetic value of the aids supplied.

Some Characteristics of Electronic Magnification Systems, by Charles B. Margach, Robert A. Reynolds and Dennis J. Wallace. *Optical Journal and Review of Optometry* (Post Office Box 2080, Radnor, Pennsylvania 19089), Vol. 112, No. 15, August 1, 1975, pp. 16–21. Report of a study concerning the use of closed-circuit television systems (CCTV) by six low-vision patients at Southern California College of Optometry's low vision clinics. Use of the systems was evaluated in terms of the total magnification achieved, the product of the electronic magnification developed, and the optical magnification used.

The Long Cane and the Guide Dog as Mobility Aids, by K. E. Klee. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 59, No. 698, June 1975, pp. 141–147. An instructor at the National Mobility Centre, England, compares the advantages and disadvantages, in terms of such variables as care, performance, ease of use, psychological impact, and degree of independence, afforded by the long cane and the guide dog. He also outlines the differences in the teaching and learning processes involved in the use of each aid.

A Sonar Aid to Enhance Spatial Perception of the Blind: Engineering Design and Evaluation, by Leslie Kay. *The Radio and Electronic Engineer* (Institution of Electronic and Radio Engineers, 9 Bedford Square, London W.C.1, England), Vol. 44, No. 11, November 1974, pp. 605–627. Numerous diagrams and photographs supplement the author's explanation of the use and design of his Binaural Sensory Aid for the Blind, or Sonic Glasses. Included is a detailed report of the evaluation conducted, involving orientation and mobility specialists and blind and sighted subjects in the United States, New Zealand, and Australia.

Orientation and Mobility Program, by Kevin Lessard. *The Lantern* (Perkins School for the Blind, Watertown, Massachusetts 02172), Vol. 4, No. 3, June 1975, pp. 5–10. This article is written by the supervisor of orientation and mobility instruction at Perkins School for the Blind, Watertown, Massachusetts. The orientation and mobility program, in operation for 15 years, now includes even the youngest students, and concentrates on such areas as body image, posture, gait, motor coordination, position, directionality, and spatial awareness.

Development of an Aerobics Conditioning Program for the Visually Handicapped, by Colleen George, et al. *Journal of Physical Education and Recreation* (American Alliance for Health, Physical Education, and Recreation, National Education Association, 1201 16th Street, N.W., Washington, D.C. 20036), Vol. 46, No. 5, May 1975, pp. 39–40. In 1973, North Texas State University, in cooperation with the Institute for Aerobics Research, Dallas, Texas, initiated an endurance training regimen for severely visually handicapped students at the University. The objective of the course was to provide students the opportunity to enhance cardiovascular function and improve the strength and endurance of the skeletal musculature; by the end of the

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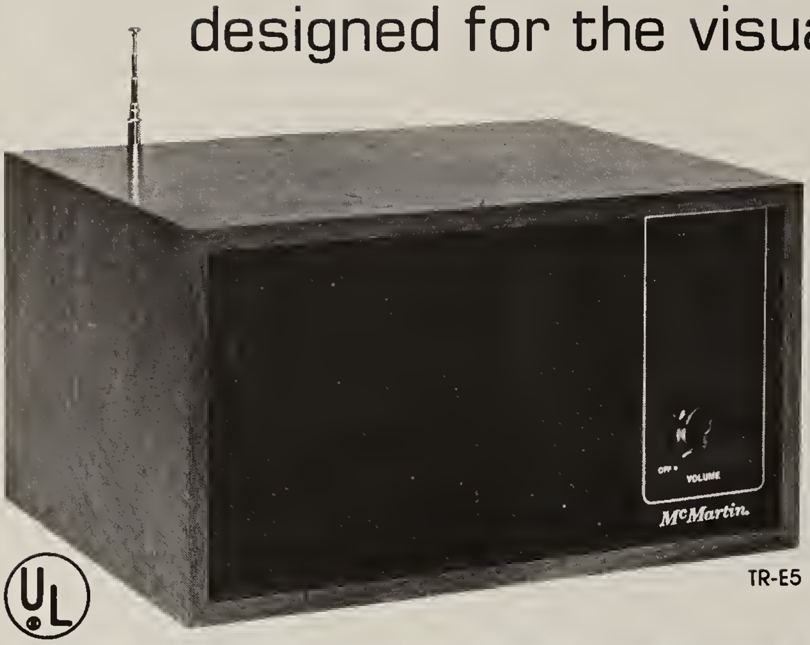

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Dinner in Darkness, by Arlene E. Wanger. *The Exceptional Parent* (Psy-Ed Corporation, 262 Beacon Street, Boston, Massachusetts 02116), Vol. 5, No. 2, March/April 1975, pp. 25-27. A group of parents of visually impaired preschool children attempted a blindfolded dinner. One mother recounts her frustrations and resultant comprehension of the difficulties experienced by her youngster.

Why Are They Blind? by Elizabeth Macfarlane Hatfield. *The Sight-Saving Review* (National Society for the Prevention of Blindness, Inc., 79 Madison Avenue, New York, New York 10016), Vol. 45, No. 1, Spring 1975, pp. 3–22. The National Society for the Prevention of Blindness' consultant in statistics reports on a study of the school-age blind population of the United States for the 1968–1969 school year Comparisons are made with the findings of a previous study for 1958–1959; causes of blindness and such characteristics as age, sex, age at onset, residual vision, and geographical location are considered.

"Blindisms": Some Observations and Propositions, by Lisa T. Hoshmand. *Education of the Visually Handicapped* (Association for Education of the Visually Handicapped, 919 Walnut Street, 4th Floor, Philadelphia, Pennsylvania 19107), Vol 7, No. 2, May 1975, pp. 56–60. Theories on the etiology of "blindisms" are presented. Blind mannerisms such as stereotyped movements, self-stimulatory activities, and withdrawal from the environment are likened to autistic behaviors. A behavioral treatment method is reported.

A Career Education Program for Visually Handicapped Students, by S. Theodore Woal. *The Vocational Guidance Quarterly* (American Personnel and Guidance Association, 1607 New Hampshire Avenue, N.W., Washington, D.C. 20009), Vol. 23, No. 2, pp. 172-173. The author, supervisor of the Vocational Guidance Service, School District of Philadelphia, Pennsylvania, describes the inclusion of visually handicapped students in the "Room to Grow" program of self- and career-awareness for elementary-level students. Braille transcriptions of career booklets, visits from productively employed visually impaired individuals, and field trips to firms employing handicapped workers enrich the program.

The Need for Professional Approach to Public Relations, by Rajendra Vyaz. *Imfama* (South African National Council for the Blind, 1st Floor, Nosa Buildings, 508 Proes Street, Pretoria, South Africa), Vol. 15, No. 2, April 1975, pp. 3–4, 7. The director for Asia, Royal Commonwealth Society for the Blind, discusses the role of professional public relations specialists on the staffs of agencies, institutions, and organizations for the blind. Points covered are the need for defining the objectives and aims of public relations campaigns, the importance of identifying different segments or "audiences" of the public, and the use of the various media.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editors. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

Aging

The Chicano Aged, by David Maldonado, Jr. *Social Work* (National Association of Social Workers, P. O. Box 504, Murray Hill Station, New York, New York 10016), Vol. 20, No. 3, May 1975, pp. 213–216. Current attitudes toward the aged Chicano are based on a stereotype that is ceasing to exist. Traditionally social agencies have ignored aging Mexican-Americans because the extended family pattern of the Chicano community provided support and a respected position to its elderly members. Urbanization and the advent of the nuclear family has changed the role of many Chicano aged. Like many other members of the aging population they are now alone, limited in the roles they are able to perform, and in financial stress. However, because the myth of the extended family still surrounds them, the Chicano aged are not receiving the services provided to the aged who belong to other cultures.

Attitudes and Adjustment

Sexuality in the Handicapped: Some Observations on Human Needs and Attitudes, by Giovanna Nigro. *Rehabilitation Literature* (National Easter Seal Society, 2023 Ogden Avenue, Chicago, Illinois 60612), Vol. 36, No. 7, July 1975, pp. 202–205. Often the non-handicapped population regards handicapped people as non-sexual entities, and views the idea of sexual activity among the handicapped as an indication of perversion. This attitude can sometimes be found not only in the general public, but among the professionals who work with handicapped people. The author stresses that as long as this attitude prevails the handicapped will be denied fulfillment of their sexual needs and development as whole individuals.

Is This How a Deaf Person Feels? by Diane Lattin. *Performance* (President's Committee on Employment of the Handicapped, Washington, D.C. 20210), Vol. 25, No. 11, May 1975, pp. 18–19. While attending a conference of organizations for deaf people, the author found herself in the hearing minority. Knowing only a minimum of sign language, she was faced with a major communications barrier. This role reversal gave her an insight into the problems deaf people have in the hearing community.

Deaf-Blind Persons

Understanding the Deaf-Blind Child, by Peggy Freeman. William S. Heinman Medical Book Ltd. (23 Bedford Square, London WC1B3HT, England), 1975. The author relates her experience as the mother of a rubella deaf-blind child.

Education

Testing and Evaluation: New Views, edited by Monroe D. Cohen. Association for Childhood Education International (3615 Wisconson Avenue, N.W., Washington, D.C. 20016), 1975. 64p. $2.50. Provides an overview of the current trends in testing and evaluation in education.

Federal Benefits

Federal Aid to Rehabilitation Facilities. Office of Human Development, Department of Health, Education and Welfare, (Division of Service Systems, Office of Program Development, Washington, D.C. 20201), 1975. This pamphlet explains, in chart form, provisions of the Rehabilitation Act of 1973 as amended, and the Public Health Service Act, which pertain to rehabilitation facilities.

Limited Vision

Teaching the Low Vision Patient—A New Optometric Area of Responsibility, by Dennis Kelleher; edited by Randall Jose. *Optometric Weekly* (Professional Press, Inc., 101 East Ontario Street, Chicago, Illinois 60611), Vol. 66, No. 24, July 24, 1975, pp. 11–13. This article points out the importance of the role of the teacher/counselor in training patients to correctly utilize their low vision aids. An editorial commentary adds the contributions the teacher/counselor can make to the prescribing optometrist.

Medicine

International Comparisons of Medical Care, by Kerr L. White. *Scientific American* (415 Madison Avenue, New York, New York 10017), Vol. 233, No. 2, April 1975, pp. 17–25. The author reports the results of a ten-year survey conducted to discover the universal patterns of health-care systems.

Medicine's Inheritance from Space. *Medical World News* (1221 Avenue of the Americas, New York, New York 10020), Vol. 16, No. 15, July 14, 1975, pp. 109–114.

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Although medicine has benefitted from the technological innovations of the space program, the inheritance is more meagre than is commonly believed. Many of the devices have low applicability and the cost of converting them is too great. This article reports the efforts that are being made to close the gap between the research and its application.

Periodicals

Rehabilitation World. Rehabilitation International USA (20 West 40th Street, New York, New York 10018), issued quarterly, $15.00 per year. Offers information on new programs and techniques in rehabilitation from around the world, with a primary focus on technological innovations, barrier free design, sheltered environments and aids for daily living.

Recreation

Playgrounds and Playspaces for the Handicapped, by Richard L. Austin and Gene A. Hayes. Theraplan, Inc. (1536 Pipher Lane, Manhattan, Kansas 66502), 1975. $2.00. A presentation of design, maintenance, and therapeutic considerations for playgrounds developed for mentally retarded children.

Research

Vision Research Program Planning. National Eye Institute (Office of Scientific Reports, Building 31, Room 6A-27, National Institutes of Health, Bethesda, Maryland 20014), April 1975. Two volumes. DHEW Publication No. (NIH)75-664. This report evaluates the current status of NEI's five major research programs and identifies research needs in the areas of retinal and choroidal diseases, corneal diseases, cataract, glaucoma, and sensory and motor disorders of vision. It also evaluates research training support and endorses grants to researchers as the primary way of developing new knowledge in the field.

Social Scientist Ought to Stop Lying, by Donald P. Warwick. *Psychology Today* (317 14th Street, Del Mar, California 92014), Vol. 8, No. 9, February 1975, pp. 38–40, 105–106. The author criticizes the morality of social scientists who deceive the subjects in their experiments by misrepresenting the intent of the research. He also warns that these deceptive practices are dangerously spilling over into other fields and creating public mistrust.

Social Work

Social Services for Persons Who Are Blind. Social and Rehabilitation Service, Department of Health, Education and Welfare (SRS Publications Distribution Center, Room G-115-B, HEW Mary E. Switzer Building, 330 C Street, S.W., Washington, D.C. 20201), 1975. DHEW Publication No. (SRS)75-23039. 44p. An introduction to blindness, the special problems of the blind population, and the services available to them, written for the social service worker.

News in Brief

- The Palo Alto, California division of the Veterans Administration Hospital has been awarded an architect-engineer contract to build a new 30-student, $2,891,000 blind rehabilitation center. The two-story structure will have the latest technological facilities, including direct translation machines and mobility aids to assist in sensory training techniques. Space is also being allotted for rehabilitation services on an outpatient basis. Construction on the project will begin in February 1976 and is expected to be completed in June 1977.

- The 1975 edition of the *Index of Blind Mail-Order Business Persons* is now available to visually handicapped persons in the reading medium of their choice. This index contains basic data on mail-order businesses run by blind people and includes entries in 24 different categories. The publication was prepared as a service by the Cleveland Regional Library for the Blind and Physically Handicapped. For further information, write to Warren Sladky, Cleveland Public Library, 325 Superior Avenue, N.E., Cleveland, Ohio 44114.

- The University of Miami has developed an instrument, similar in size and appearance to a fountain pen, that can restore a small measure of sight to patients with diabetic retinopathy. The instrument is used to siphon the blood-clouded fluid from the eye and replace it with a saltwater solution. The technique has been successful in 75 percent of the operations performed, though sight restoration is minimal.

- A Spanish-language information service covering all aspects of rehabilitation has been established in Mexico City by Rehabilitation International and the Permanent Inter-American Committee on Social Security. Servicio Inter-americano de Informacion en Rehabilitacion (SIDIR) will stock and distribute *Rehabilitation International* and other materials published in Spanish, maintain a basic reference library, evaluate new publications, and publish a newsletter. Additional information about SIDIR may be obtained from Dr. Novelo, Comite Permanente Interamericano de Seguridad Social, Apartado Postal 20532, Mexico 20, D.F.

- New York's Metropolitan Transportation Authority announced half-fare privileges for handicapped persons in off-peak hours on all of its subway and bus lines, effective September 2, 1975. Identification cards will be issued to all handicapped persons who apply.

- In Touch Networks, Inc. (36 West 46th Street, New York, N.Y. 10036) will braille menus free of charge for any restaurant in the New York City area. Restaurants in the area that now have braille menus available are: Sardi's, Original Joe's, The Magic Pan, Harry M. Stevens, La Fleur, The Pantheon Greek Restaurant, Bonaparte's, Riene Au Tunnel, and Dino and Harry's.

- Blind athletes of the United States are invited to compete at the Olympiad Games for the physically disabled, August 1976, in Toronto. The Olympiad will be held shortly after the 1976 Olympics in Montreal. The Canadian government will furnish room and board for all athletes during their stay in Toronto, and arrangements are being made in this country to provide travel expenses. Male and female athletes, 16 years and older, with 1/20 vision or less are invited to apply for the U.S. team. For more information, contact Dr. Charles Buell, 33905 Calle Acordarse, San Juan Capistrano, California 92675.

- Western Union has announced two new, nationwide services for visually handicapped people—the braillegram and the large print message. The braillegram and the large print message can be sent by phoning Western Union's toll-free number, by Telex or TWX terminals, or over the counter at Western Union offices. The messages are then mail-delivered to the visually impaired person. The cost of each message is $2.00 for the first 25 words of text, and $1.00 additional for an additional 25 words.

- A recent study conducted by David W. Macfarland, M.D., Emily Tufts, M.D., Robert D. Boyd, Ph.D., and Carl B. Dodrill, Ph.D., of the University of Oregon Medical School, concluded that children born to mothers who had rubella during pregnancy may not be mentally retarded as previously believed. The conclusions were based on a study of 92 such children born between 1964 and 1966. After administering various tests, they discovered that the mean I.Q. for the group was 99.46; average for "normal" children being approximately 100. "We believe," the authors stated, "that unwarranted and unproven assumptions of intellectual subnormality are commonly being made in children with rubella syndrome who are already handicapped by sensory or motor defect. Such assumptions can in no way assist a child to achieve his or her greatest potential and . . . may lead to self-fulfilling prophecy."

- A tree, a blue spruce, was planted at the Queens Lighthouse for the Blind, New York, in memorial of the late Phyllis Case. Mrs. Case, who died April 4, 1973, was for many years the supervisor of the Lighthouse's recreational activities. Over 200 clients, staff and friends contributed to the memorial tree, which was formally dedicated in ceremonies April 3, 1975.

- A large print edition of the "Holy Eucharist, Second Service" (Episcopal Order of Worship) is available for 75¢ from Church Army Publications, 815 Second Avenue, New York, New York 10017.

- The second edition of *3-D Guitar Chords,* by Natalie Lamken, is now being distributed through the National Braille Press. The book illustrates guitar chord diagrams in durable raised line drawings and large type. A series of five cassettes instruct the beginning guitarist in chords, strums and a variety of songs. The complete package, which includes the book, five cassettes, a printed outline of each cassette's contents, a capo, a pick and a fret finder, is priced at $50.00 plus $3.00 for postage. Orders should be sent to Natalie Lamken, 1724 17th Street, N.W., Apt. 72, Washington, D.C. 20009.

- The National Accreditation Council for Agencies Serving the Blind and Visually Handicapped (NAC) has announced the accreditation of two Illinois institutions, the Illinois Braille and Sight Saving School and the Illinois Visually Handicapped Institute. In addition, four agencies have qualified for reaccreditation: Dallas County Association for the Blind, Ohio State School for the Blind, Oregon State School for the Blind, and Pittsburgh Blind Association.

- The Dutch organization, Petronella Moens, publishes a braille magazine called *Talenstudie* for persons interested in European languages. The magazine, which has sections in French, German and English, contains short stories, newspaper articles, some idiomatic and grammatical information and poetry. No contractions or abbreviations are used in any of the languages. The magazine is issued ten times a year. Subscription price for one year is ten guilders (equivalent to $4.00), payable by international money order to Mr. P. A. Kneppers, De Bronkhorst 4, Wateringen, The Netherlands.

- An advisory committee, composed of physically handicapped citizens and representatives of the building industry, has been selected to help expand the existing standards for making buildings accessible to those with limited mobility. Syracuse University School of Architecture, under contract from the U.S. Department of Housing and Urban Development, will be responsible for updating the current standard, so that it will apply to dwelling units and related exterior spaces as well as public buildings. Also named to advisory panels were architects, rehabilitation specialists, industrial designers and administrators.

- Two new courses are being offered by the Hadley School for the Blind (700 Elm Street, Winnetka, Illinois 60093). One course, "Rapid Braille Reading," compiled by Dr. Vearl G. McBride, consists of nine lessons in two braille volumes. The course covers the techniques and principles of increasing braille reading rates. The second course, "Home Repairs by the Blind Householder," is available in braille or cassette form. It presents basic information for home repairs, from painting to plumbing.

- The Blue Cross Association has published a comprehensive medical phrase booklet titled, "A Foreign Language Guide to Health Care." The booklet tells the traveler how to ask for medical, dental and pharmaceutical assistance in French, German, Italian and Spanish. Free copies of the booklet are available from Blue Cross offices throughout the country.

- A recent innovation to aid glaucoma patients is a thin oval wafer, called an Ocusert, that dispenses a week's supply of medication to the eyeball. Ocusert was developed by Dr. Alejandro Zaffaroni to eliminate the four-times daily routine of eyedrops many glaucoma patients must follow. The wafer also controls the problem of under- and over-dosages of medication.

- The report on the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped (NAC), compiled by the U.S. General Accounting Office, is now available in braille. This review was undertaken in response to charges made against NAC by the National Federation of the Blind. Copies of the report are available free of charge from the U.S. General Accounting Office, Distribution Section, Room 4522, 441 G Street, N.W., Washington, D.C. 20548. To expedite orders include the report number, B-176886, and the publication date, September 27, 1974.

- The International Sports Organization for the Disabled (ISOD) is organizing Winter Olympic Games for amputees, blind and partially sighted people, to be held in Örnskoldovik, Sweden, February 1976. The Games will feature Alpine and Nordic skiing. ISOD will provide board and accommodations for the participants.

- Diane S. Roupe of Des Moines, Iowa, has been named the new executive director of the National Rehabilitation Association. Ms. Roupe, an honors graduate of Northwestern University, Evanston, Illinois, has a widely diversified background covering the fields of volunteerism, rehabilitation and business.

  Most recently, Ms. Roupe served as president of a private firm, Volunteer Consultants, Inc., which is concerned with volunteerism and promotional activities. Prior to that she conceived and initiated a project called "Volunteers in Rehabilitation" in cooperation with the Goodwill Industries of America and the Rehabilitation Services Administration. Ms. Roupe has combined many of her volunteer efforts with Goodwill Industries and is still active on the advisory board of Goodwill Industries of Des Moines. She was also the primary organizer of Adapt, Inc., a comprehensive drug prevention and treatment agency serving central Iowa.

APPOINTMENTS

- Division for the Blind and Physically Handicapped, Library of Congress: **Mary Jack Wintle,** assistant chief.

- West Virginia Department of Education: **Ray Wilks,** specialist for the visually impaired.

- Blinded Veterans Association: **Jerry R. Monroe,** national president.

AWARDS

- American Association of Workers for the Blind: Alfred Allen Award—**Donald Wing Hathaway,** former president of Hadley School for the Blind; W. Alfred McCauley Award—**Thomas W. Dickey,** Rehabilitation Institute, Southern Illinois University; Ambrose Shotwell Award—**Roy Kumpe,** executive director, Arkansas Enterprises for the Blind; Blaha Award—**Russell C. Williams,** former chief of blind rehabilitation, Veterans Administration; Special Citation for Promotion of Publications on Rehabilitation of the Blind—**John G. Cull** and **Richard E. Hardy,** Virginia Commonwealth University.

- Louis Braille Gold Medal, World Council for the Welfare of the Blind: **Hans Seierup,** founder of the European Regional Committee, and **Dr. Gottwald,** honorary president of the Federation of the Blind, West Germany.

- Takeo Iwahashi Prize World Council for the Welfare of the Blind: **Tsung Wen-Shiong,** Taiwan.

RETIREMENTS

- Division for the Blind and Physically Handicapped, Library of Congress: **Charles Gallozzi,** assistant chief.

- Chicago Lighthouse for the Blind: **George W. Fearn,** executive director.

COMING EVENTS

November

7-8 Association for the Education of the Visually Handicapped, Mid-Atlantic Region, First Biennial Conference, Wilmington, Del.
11-15 National Association for Education of Young Children, Dallas.
12-13 National Accreditation Council for Agencies Serving the Blind and Visually Handicapped, Annual Meeting, Little Rock, Ark.
13-15 International Symposium on Cataracts, Iowa City.
16-19 American Association of Homes for the Aging, 14th Annual Conference and Meeting, San Diego.
16-20 American Public Health Association, Annual Meeting, Chicago.
18-20 International Conference on the Situation of Blind Women, Belgrade, Yugoslavia.
29-December 4 Association of University Professors in Ophthalmology, Washington, D.C.

December

3-5 National Council on Philanthropy, 18th National Conference, Washington, D.C.
17-20 American Public Health Association, National Round Table Conference, New Orleans.

February 1976

1-7 Canadian White Cane Week.
8-11 Council for Exceptional Children, Conference on Right to Education/Placement of Exceptional Children, New Orleans.
29-March 3 Council on Social Work Education, Annual Program Meeting, Philadelphia.

March

3-7 American Orthopsychiatric Association, Annual Meeting, Atlanta.
28-April 2 Second International Congress on Prosthetics Techniques and Functional Rehabilitation, Cannes, France.

April

5-9 European Congress of Ophthalmology, Hamburg, Germany.
9-13 American Occupational Therapy Association, Mid-year Meeting, Atlanta.

Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display $13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, *15 West 16th Street, New York, N.Y. 10011.*

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CATALOGS

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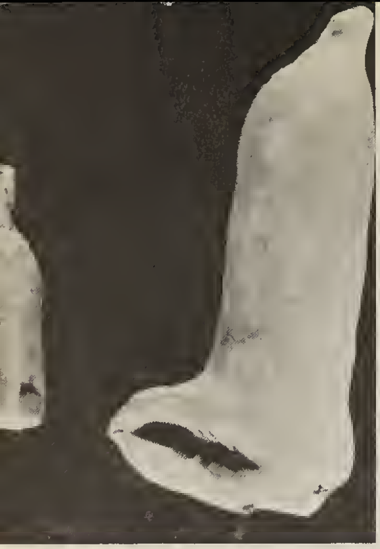
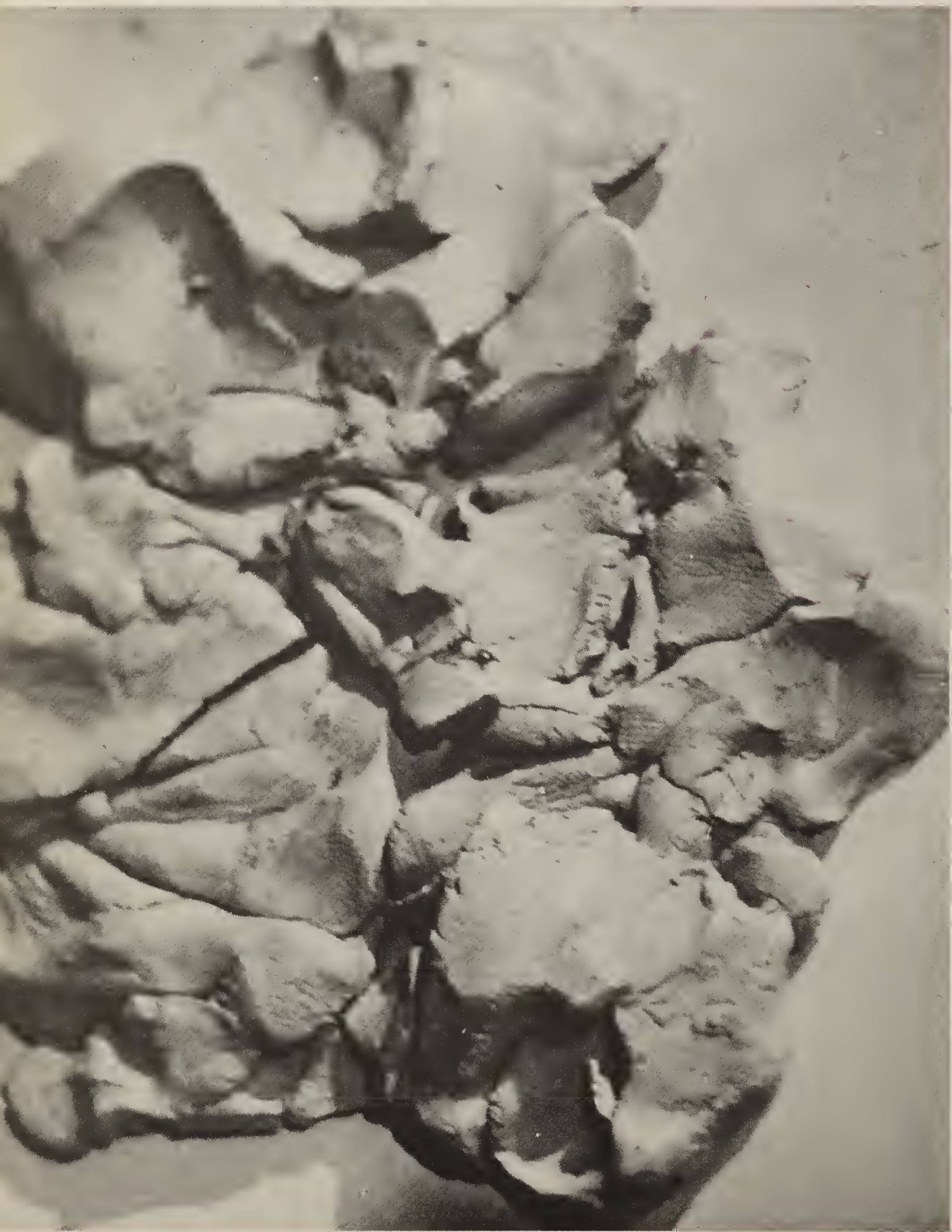
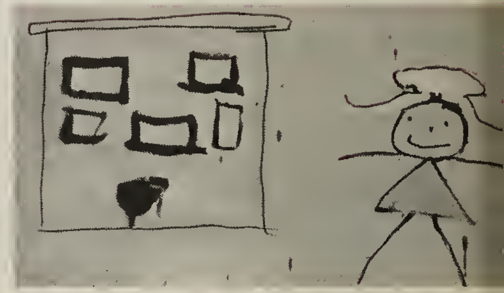
P.O. Drawer 10K
Milwaukee, Wisconsin 53201







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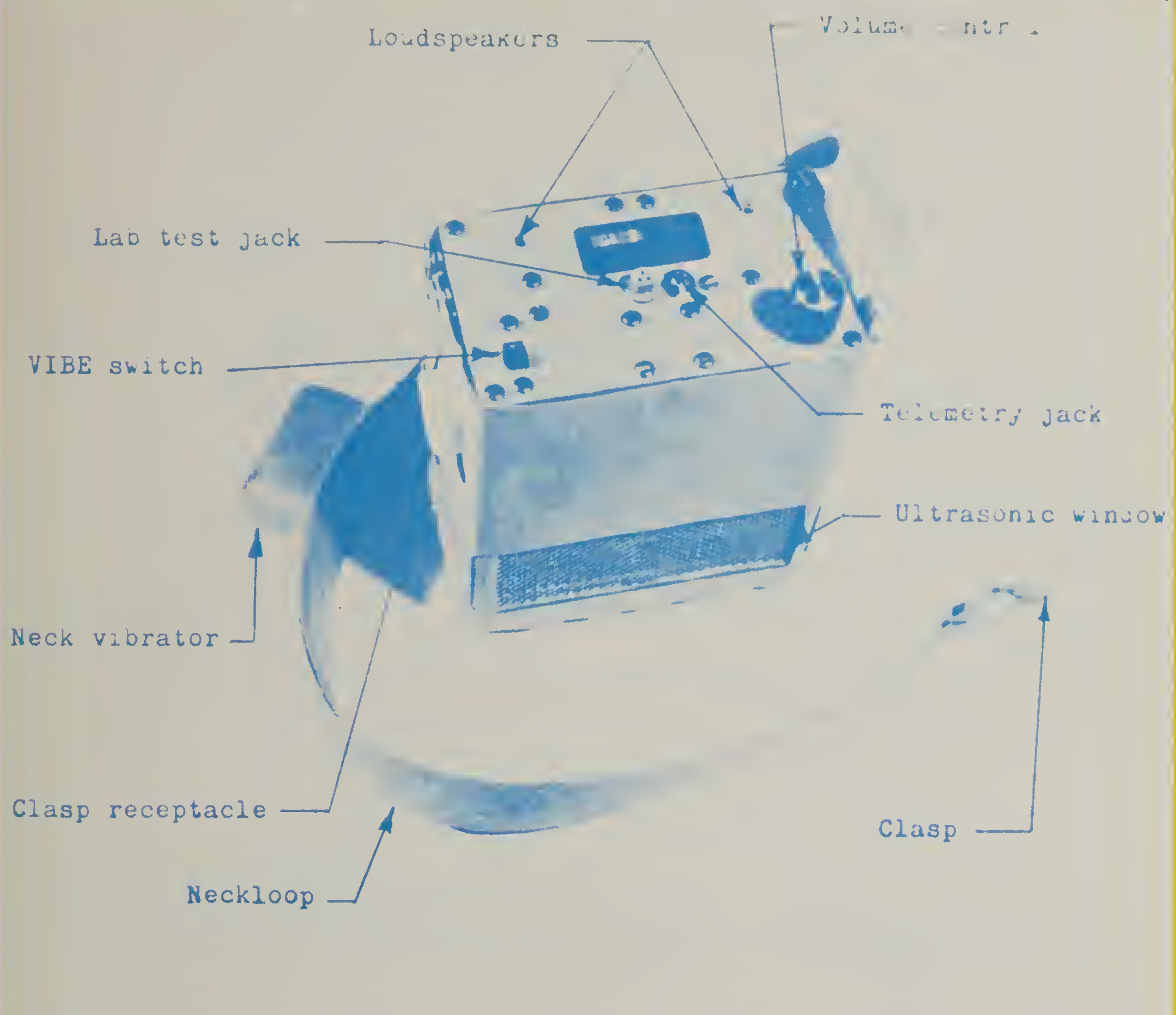

ON-OFF switch and charging jack are on bottom - not visible in photo.

E MODEL PATHSOUNDER

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Travel in Adverse Weather Using Electronic Mobility Guidance Devices

LEICESTER W. FARMER

Mr. Farmer is an orientation and mobility and research specialist, Edward Hines, Jr., Hospital, Veterans Administration, Hines, Illinois.

Abstract: *After a discussion of the required characteristics of an ideal aid, four electronic mobility guidance devices—the Mowat Sonar Sensor, the Russell E Model Pathsounder, the Bionic C-5 Laser Cane, and the Mark II Binaural Sensory Aid—are described in detail. Training in the use of these secondary devices is based on a high level of skill with the long cane or the dog guide. Intensive training in a broad variety of settings and under varying conditions is necessary if the devices are to be a genuine help to the user. The experiences of two users in snowy weather are recounted.*

▪ The inclusion of electronic mobility guidance devices in the program of a conference on travel in adverse weather, especially winter conditions (held in Minneapolis, February 23-25, 1975; sponsored by the American Foundation for the Blind), is an important step in the evolution of mobility devices in this country. It indicates that the important clinical work and field testing of these devices have not been overlooked by the conference planners, that interest among orientation and mobility specialists and blind rehabilitation institutions apparently is growing, and that there is increasing recognition of the fact that mobility devices can play a major role in helping blind persons to cope more effectively with many of the problems and challenges involved in independent travel during the peak winter months.

A very gratifying aspect of this conference is the realization that among those in attendance were several orientation and mobility specialists who have been trained and certified to teach blinded travelers to use electronic devices—many more than have ever been at any previous gathering in the United States. Until very recently, less than a handful of specialists in this country had any appreciable knowledge and experience in working with all of the mobility devices which were presented and field-tested in Minneapolis. And now, because of the Professional Field Experience Courses being held at Western Michigan University, Kalamazoo, some ten specialists are added to this growing list every eight weeks or so.

DEVELOPMENT OF GUIDANCE SYSTEMS

Man has long dreamed of using the properties of nature and his own intelligence and inventiveness to develop guidance systems and training methods which would provide blind travelers with safer and more tension-free means of achieving orientation and mobility. Some of the fascinating efforts to realize this dream are reported in an article by Nye and Bliss (1970). As early as 1912, Fournier d'Albe built a mobility device, the Exploring Optophone, to aid the blind in their orientation and mobility. During the intervening years, many devices and instruments, over 25 in the past 28 years (Benjamin, 1968), have been invented, but most of them have fallen by the wayside and are only kept alive in museums, historical reviews, and on occasions such as this one. A very precious few now exist as "reincarnations" in some current obstacle detectors and sensory aids, because their systems were adopted and updated, or as the result of a series of evolutionary model changes and the use of sophisticated space-age electronics and technology. Three of the mobility aids which showed early promise and which have been used in training and evaluation courses and have been tested in the field, were discussed, demonstrated, and field-tested at this conference. They are the Lindsay Russell "E" Model Pathsounder, the Bionic C-5 Laser Cane, and the Mark II (Mk II) Binaural Sensory Aid (BSA). Also, the Mowat Sonar Sensor, a "situationally" useful hand-held device, was presented and demonstrated.

Before discussing the electronic mobility guidance devices mentioned above, I shall review some things that can be said about mobility devices in general. It must be remembered that electronic devices are still considered "experimental" by most of the orientation and mobility specialists and other persons who have had intimate contact and experience with them. They are, with one exception, secondary devices and, as such, must be used in conjunction with either a dog guide or long cane. At Hines VA Hospital in Hines, Illinois, we get a fair share of inquiries about these

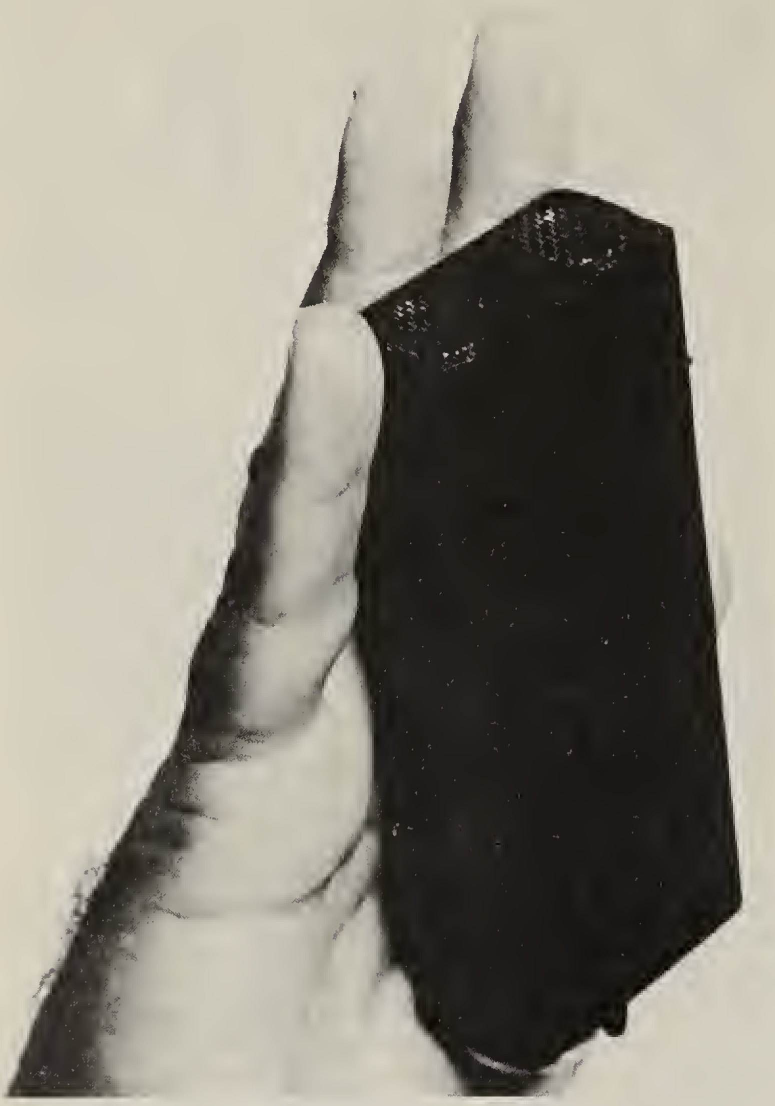

Figure 1. The Mowat Sonar Sensor

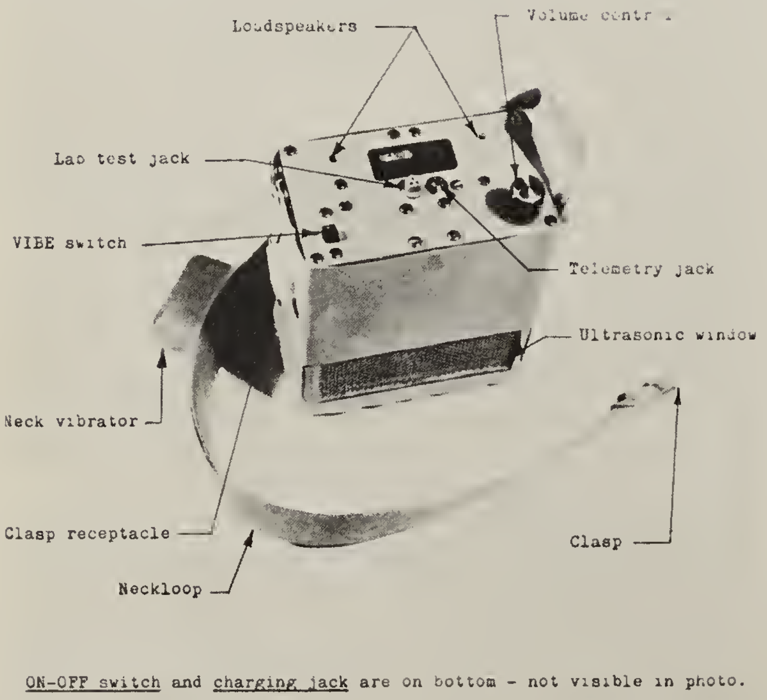

Figure 2. The Russell E Model Pathsounder (The on-off switch and charging jack are on the bottom of the unit and are not visible in this photograph.)

devices from individuals who have either had no useful training with a dog guide or long cane or who have had little or no success with these two primary means of orientation and mobility.

I want to emphasize in this paper that electronic mobility guidance devices are no panacea for all of the ills and problems which confront and challenge blind people in their efforts to become independently mobile. Any one of these devices in the hands of the uninitiated can cause great confusion and do much more harm than good. Miyagawa (1974) and Thornton (1975), two experienced long-cane travelers who have been using mobility devices for the past four years, have written of their experiences and submitted the reports for publication in the *New Outlook for the Blind.* However similar or different have been their experiences with the Laser Cane and the BSA, they reach common ground when they recommend, essentially, that prior training in orientation and mobility skills be stressed as a prerequisite to participation in an electronic mobility device training course.

What Should a Device Do?

Now, what is an electronic mobility guidance device? What are the least functional benefits I would expect to receive from such a device? How can I translate these benefits into tangibles which will enhance my orientation and mobility with my primary travel mode and furnish me with meaningful and useful information about my immediate environment? And what are some of the requirements for good device function and utility that I would want manufacturers to meet?

Simply stated, an electronic mobility guidance device is one which sends out signals to sense the environment within a certain range (distance), processes the information perceived, and furnishes the user with certain relevant bits of this information about his immediate environment.

I would at least expect my mobility device to probe the immediate area, sense the situation, and present it to me (auditorily, vibratorily, tactually, or in some combination of these) in an intelligible and useful manner. I would expect that this device, either by itself or in concert with a dog guide or long cane, would at least inform me of obstacles in my travel path and in the vicinity of my head, and forewarn me of terrestrial discontinuities which might constitute a safety hazard for me.

DIVIDENDS OF DEVICE Tangible dividends derived from the use of any mobility device enables the user to achieve an awareness and knowledge of his environment that he could not otherwise get with our conventional means of travel. One can detect objects, localize them, and then exercise the option of avoiding, contacting, or just using them for orientation and navigational purposes. One can determine, with reasonable accuracy, the range, azimuth, elevation, and dimension of objects. One device has a capability that makes primitive, limited object identification possible through the recognition and interpretation of tonal characterizations representative of various presenting surfaces. A mobility device enables one to locate specific landmarks and useful objects, to get directional indications from vertical guidelines, and to make use of non-physical trailing and tracking. There are other benefits, but these are sufficient for starters.

What I have been doing, obliquely, is calling attention to the unique ways in which electronic mobility guidance devices can be a powerful force in helping blind travelers better meet and cope with some of the demanding circumstances of adverse weather. In fact, most phases of the electronic mobility devices training program are such that the use of an aid cannot be considered without at least having an implied application in adverse winter weather.

We do not currently have one device that will meet all of the requirements that I shall list; but I am not only talking about the state of the art as it presently is, I am also suggesting what it should be. A mobility device must serve its intended purpose by only helping and not hindering the performance of the user with his primary means of traveling; it must not, in any way, interfere with his natural sensory channels or the intimacy he enjoys with his environment. It should be as small and lightweight as possible and have a minimum of accessories, boxes, and connecting cords. It should be easy to get, easy to put down, and easy to store (Benjamin, 1968). It should give the user the option of using either an auditory, vibratory, or tactile output, or a combination of these outputs. It should be reliable. It should be durable. It should reflect good quality control that would guarantee interchangeability among models of the same generation without ill effects. It should require infrequent repairs and have a very short "turn-a-round" time when repairs are needed. It should be waterproof and should operate maximally in abnormal temperatures of heat and cold, as well as under normal conditions. It should have specifications which the manufacturer should be required to meet. The device should be designed to accommodate telemetry or monitoring equipment and, as soon as it is technically and economically feasible, the monitoring equipment should be wireless. Rechargeable batteries should be accessible to the user so that he may remove and replace them at his discretion. Battery chargers should be completely automatic and have audible controls which, when activated, would indicate if the battery were fully charged, charging, or completely flat; and it should be capable of charging at least two batteries simultaneously.

The inventors of mobility devices have used electrical, optical, sonic, and electronic principles (Frieberger, 1973) in developing travel aids for the blind. The Laser Cane uses light (electromagnetic energy) for its system, while acoustic or sound energy is used in the Pathsounder, Binaural Sensory Aid, and the Mowat Sonar Sensor systems. These four devices are described in the following paragraphs.

MOWAT SONAR SENSOR The Mowat Sonar Sensor (Figure 1) was invented by Geoff C. Mowat of Auckland, New Zealand. A small number of these devices were shipped to the Veterans Administration in New York in May 1973 for evaluation by orientation and mobility research specialists at the VA Blind Rehabilitation Centers. The evaluation is still in progress.

The Mowat Sonar Sensor is intended as a secondary aid to mobility and is usually kept in the pocket or purse until it is needed. It is held in the hand and is generally used to locate doorways, vertical landmarks at street crossings, bus stops, etc. It can be used an an environmental checker to locate a particular place or entrance way by measuring the height and length of walls and hedges and, at the same time, checking the width of certain openings. The Sonar Sensor can be used in adverse winter conditions to "look" across snowbanks or shorelines for guidelines and recognizable landmarks.

This device operates by emitting pulses of ultrasonic energy and, when an object gets within range, the sensor housing vibrates in the user's hand; it does not vibrate unless an object is in the travel path. Should more than one object be in the field of view, it has the ability to respond selectively and indicate the nearest object. The speed of vibration is determined by the distance from the object and is inversely related to that distance. When within range of an object, the device will vibrate 16 times per second. As this distance is shortened, vibrations will increase to 56 vibrations per second at a distance of one foot from the object.

The instrument sends out a cone-shaped beam which encompasses a field of approximately 40 degrees. Maximum range is determined by the reflectivity of the presenting surface and good reflectors such as brick or concrete walls can be detected up to a distance of 20 feet. The aid has a short-range button and, when it is depressed, maximum range can be reduced to approximately half.

Power Supplied by Batteries

The Sensor uses two non-rechargeable dry batteries; type Eveready 532 or Mallory PX24. The two batteries are connected by pushing the small connector end of one into the larger connector end of the other. They are then inserted, small connector end first, into the battery compartment. The knurled battery retainer screw (which in some sets is hard to get on) is then placed against the battery, making sure that the connector end of the battery slips into the recess in the retainer screw. The screw may then be pushed forward and screwed into the case. If the batteries are put in the wrong way, the device will not operate, but no harm will be done provided they are not left in this position. Batteries last 40-50 hours since consumption varies widely with use. An automatic circuit maintains constant range with declining battery voltage. Batteries need replacing when vibrations become weak. When using batteries which are low, periodic interruptions will be noticed at close range. According to the manufacturer, the batteries do not run down quickly and the user need not carry spares. Range should not be affected unless the batteries are very low.

This device is not completely waterproof, but may be used for short periods in light rain. However, exposure to heavy rains should be avoided. The case should be wiped dry after use if it gets wet.

THE RUSSELL PATHSOUNDER Lindsay Russell, consultant engineer with the Sensory Aids Evaluation and Development Center, Massachusetts Institute of Technology, invented the Pathsounder. The late John K. Dupress, then with the American Foundation for the Blind, served as a subject and evaluator and collaborated in helping develop some of the tactics for using the device (Russell, 1965). The "E" Model Pathsounder (Figure 2), which became available in mid-1974 and is still in the experimental stage, was preceded by the "H" Model Pathsounders which were developed in 1968-69 (Russell, 1969).

The Pathsounder is a small, battery-operated sonar intended for use as a secondary mobility aid by the blind, particularly for those who travel independently with a long cane. However, this device has proven very useful in enabling blind wheelchair users, those with injuries demanding extra upper-body protection, those who must use crutches, etc., to achieve varying degrees of independent orientation and mobility. The device is worn on the chest (held in place by a neck strap) and warns of objects in the line of travel.

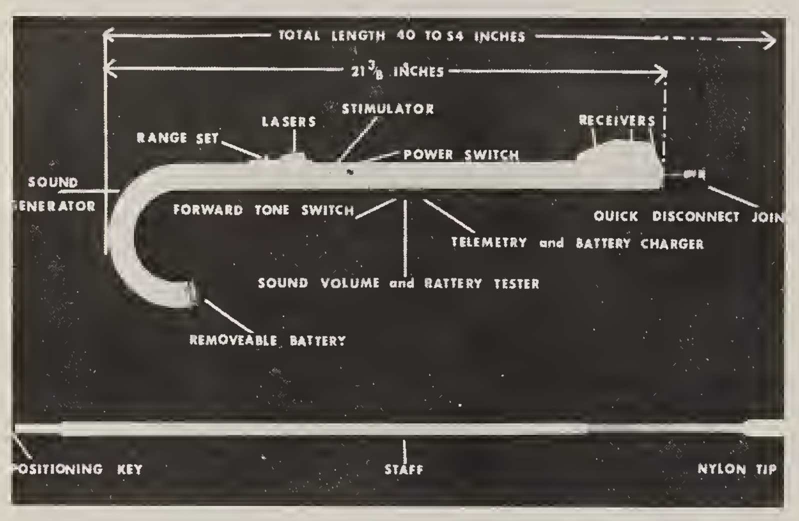

Figure 3. The Bionic C-5 Laser Cane (upper section)

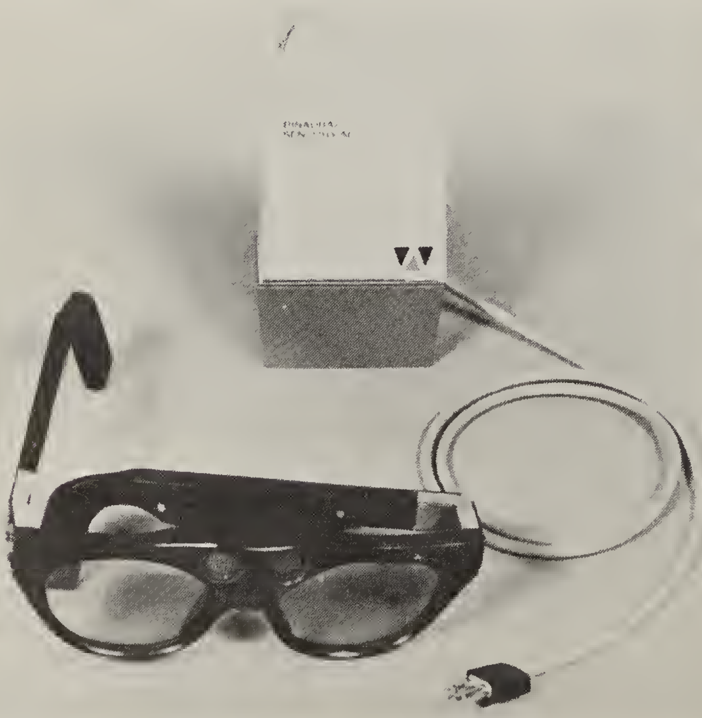

Figure 4. The Mark II Binaural Sensory Aid

There is no output as long as the path is clear. The Pathsounder emits ultrasonic waves 15 times per second and the maximum diameter of the cone thus formed is approximately 20-24 inches at a distance of six feet from the user's chest. This ultrasonic cone gives protection for an area equal to the width of the shoulders and from below the waist to above the head. The aid has an auditory and vibratory output.

Auditory and Vibratory Warning Signals

The device gives an audible warning (a buzzing sound) when the user gets within six feet of an object. The buzz changes to a high-pitched signal (a beep) when something comes within 32 inches, the inner protection zone, of the device. A vibratory signal is available to the user to indicate the presence of objects in the same zones. When an object appears in the outer zone (32-72 inches), the entire Pathsounder vibrates rapidly on the chest. Whenever an object is within the inner zone of protection, the vibration of the device stops and a tiny vibrator on the neckloop is activated; this vibration is felt against the back of the neck.

The inventor had three reasons for incorporating the vibratory display (Russell, 1974): 1) it can serve the hearing-disabled blind person; 2) it can be useful in a noisy location where masking of sounds might take place; and 3) it is private. The vibrators are almost inaudible and thus cannot make the user feel conspicuous.

The Pathsounder has an internal nickel-cadmium battery which, when fully charged, will operate the aid for two to five hours, depending upon usage. The "E" Model Pathsounder has a battery charger, with battery status capability, which automatically adjusts charge time to battery needs; it plugs into a regular wall outlet.

This device is not waterproof and, if exposed to heavy rain, will fail to function. Should this happen, the device can be restored to normal operating condition by being placed in a warm place and allowed to dry out for a day. The aid has been tested in 115 degrees F and there are no particular problems associated with its use in hot weather. The Pathsounder circuitry is tested down to −8 degrees F. The battery, however, loses strength at very low temperatures and will not run the aid for as long on a single charge.

THE C-5 LASER CANE

The Laser Cane was invented by J. Malvern Benjamin and developed under the sponsorship of the Research and Development Division, Prosthetic and Sensory Aids Service, Veterans Administration, Central Office. (Figure 3 shows a close-up of the C-5 Laser Cane.) The C-5 Laser Cane is the fifth of a series of canes; a series of five models of hand-held devices preceded the canes. Four of the hand-held devices resembled purses, while the remaining one looked like a flashlight.

The C-5 Laser Cane may be considered a primary, as well as a secondary, mobility aid; even if the electronic components fail to function, the cane may still be used as a conventional long cane. It is somewhat heavier, however, weighing over a pound as opposed to approximately eight ounces for the long cane. The purpose of the Laser Cane, as expressed by the inventor, is to add to the environment-probing ability of the conventional long cane.

The C-5 Laser Cane provides three important pieces of information which could play a role in helping to reduce tension in a traveler and enable him to proceed more gracefully. The device emits pulses of infrared light which, if reflected from an object in the travel path, are detected by photodiodes placed behind receiving lenses. The angle made by the diffuse reflected ray passing through a receiving lens is an indication of the distance to the object detected. This principle of optical triangulation, first used by Cranberg (1946) for that purpose in 1943, was chosen in preference to ultrasonic energy because of its simplicity and small beam width.

Sensors Probe Up, Down, and Straight Ahead

Three beams of infrared lights are emitted simultaneously from the cane, one up, one straight ahead, and one down. The signal emitted by the down channel is a low-pitched rasping tone designed to alert the user of any step-down greater than six inches which appears about six feet (two paces) in front of him. Examples of places where the device might be particularly useful are steep down stairs, uncovered manholes, edges of train platforms, etc.

The forward channel has two signal outputs, a tactile and an auditory one; the auditory signal may be switched on or off and has a medium-pitched tone. The C-5 has a range lever which can be set to detect objects from five feet to a maximum of 12 feet from the cane tip. A tactile stimulator, which vibrates against the index finger, is activated when the user comes within the five- or 12-foot range. The beam is approximately two feet above the ground.

The up channel signal is a high-pitched tone and the optics is adjusted so that objects 18 to 24 inches in front of the cane tip and six feet above it will be detected. The six-foot height was chosen so that one would not get false alarms when going through doorways.

The Two Sections of the Laser Cane

The Laser Cane has two sections and may be taken apart for easier portability and storage when not in use. The lower section of the cane contains no electronics and is light and tapered. The length of the cane can be fitted to an individual's measurements and can be supplied in one-inch increments from 42 to 54 inches. The upper section of the C-5 Laser Cane contains all of the electronics needed to run the cane. Included in this section are the three lasers and transmitting optics, the integrated circuits, discrete circuitry, and the three lenses of the receiving optics.

The crook of the C-5 Laser Cane contains the six-volt, 225-milliampere, nickel-cadmium rechargeable battery which furnishes power for the whole system. The battery is expected to last approximately three hours between charges and requires 12 hours to recharge. The battery can be replaced by the user. A small battery charger is supplied with the C-5 Laser Cane, but it has no battery status controls. However, the cane has a switch which turns on a tone the volume of which indicates the amount of charge in the battery.

BINAURAL SENSORY AID

The Binaural Sensory Aid (BSA) was invented by Dr. Leslie Kay, an Englishman; the original concept was formulated in 1959. He now lives in New Zealand where the Mark II (Mk II) underwent development before a production model was produced and released in 1974 (Figure 4). The present aid had as its predecessors the Sonic Torch (the English term for flashlight) and the Mark I and Mark IA models.

The Mk II is a secondary mobility device for the blind; it is headworn and is used in conjunction with a dog guide or long cane. Unlike its forerunners, the spectacle frames fold up when not in use. The BSA has three little transducers, a tiny transmitter situated above the bridge of the nose which radiates ultrasonic signals out into the environment, and two small microphones (located directly above the miniature loudspeaker) which receive echoes from objects in the illuminated zone. The returning signals are processed in the device and transmitted to the two little earphones located in the temple bars of the glasses. The output then can be heard in the various types of ear pieces that nestle in the ears.

The BSA Is Also an Environmental Sensor

The Binaural Sensory Aid is designed to give the blind user a percept of his environment through his auditory senses at a level significantly higher than his own unaided senses will allow. The device gives protection from below the waist to above the head and the wide cone-shaped beam provides coverage off to the sides. It cannot, however, detect step-downs or very low hazards in the travel path.

Pitch, distance, natural direction, and quality of sound from objects in the environment form the essence of the Mk II. Through the propagation of the ultrasonic waves, echoes from objects within the cone and up to approximately 20 feet, with good reflectors, are produced at the two outputs of the device. Binaural information about the distance is indicated by the pitch of the sound. Direction is perceived by means of the arrangement of the two tiny ultrasonic receiving transducers which are each slanted slightly outward to the right and left. Therefore, sounds coming from the left will be louder in the left ear, sounds coming from the right will be louder in the right ear, and sounds coming from the line of travel will be heard equally in both ears. Thus, azimuth can be determined by perceiving the difference in loudness in the two ears. Engineered into the system is the facility to perceive the quality (timbre) of the echo, indicating the surface structure of objects in the environment.

The Mk II is powered by a small box, about the size of a cigarette pack, which houses electronic components, a rechargeable battery, and a single control knob for the volume. This control box plugs into the spectacles by means of a flexible cable. The battery is removable and can be replaced by the user. The aid is not waterproof and loses sensitivity in heavy rains. The battery charger for the device is fully automatic and switches itself off when the battery has been fully charged.

Proper fitting of the BSA is very important and in the past has posed many problems. If the trainee is to wear the aid comfortably for extended periods of time, it is imperative that he has a good fit. The manufacturer does not make the final assembly of the spectacles now until measurements are made with a fitting kit; enclosed in the kit is an instruction manual for the optometrist. Upon receipt of the measurements, a frame is then assembled to the measurements and is returned to the agency involved.

Accessories with the Mk II include a modified version of the Mk II frame for use by instructors and a monitor set which enables the instructor to monitor the signal output during training periods.

USING MOBILITY DEVICES

In discussing travel with electronic mobility devices under any condition, it must be pointed out that the mere act of causing an electronic pulse to be propagated out into space is, of itself,

> **"Travel in adverse winter weather is not easy, but travelers who use electronic mobility guidance devices feel that they contribute materially to their ability to cope much more effectively than their conventional long canes."**

not very significant if such energy travels into an acoustically cueless environment. The great value of the electronic mobility devices is their capability to enhance perception of the environment by extending the range of that perception an appreciable distance beyond the reach of the long cane or dog guide. However, to be meaningful and useful, the data must be accurately interpreted and integrated with ambient environmental travel resources and other reference information. This is true, whatever the season, whether in the month of July or the middle of February. That is to say, the total potential of the mobility device is always embodied within it and the user's training and travel experiences must be comprehensive enough to accommodate this concept and prepare him for as many different kinds of travel situations under as many climatic conditions as possible.

For example, one means of preparing a trainee for adverse weather conditions is to afford him ample and meaningful opportunities to travel in unfamiliar settings. Even without direction, it becomes obvious that the traveler does many of the things in unfamiliar areas that one may be forced to do when traveling along snowy, undefined paths. Because he wants to know what is in his immediate area and how what is there might contribute to the solution of his present concerns, he will constantly search for guidelines or other objects along the path. Should he find any guidelines, he will maintain very close surveillance of them with the electronic or sonic beam as long as they are available. The need to have environmental references is particularly acute in adverse winter weather and total preparation of the trainee during the training and evaluation period addresses itself to this concern as well as to the other phases of orientation and mobility.

TRAINING USERS OF DEVICES Trained, experienced travelers are accepted for training with electronic mobility devices, but when they have been away from the training centers for long periods, their cane and travel skills tend to deteriorate in many cases. When a trainee comes to the training center, he is given travel assignments which include making at least one trip each in a residential and business area using his primary travel mode. When he has completed the runs, his performances are discussed with him. His basic cane and travel skills are evaluated and, where deficiencies exist, remedial training measures and drills are instituted. Training with the mobility device may go on concurrently or may be postponed until the trainee's skills reach an acceptable level.

Once training with the mobility aid has begun, the trainee is given the history of the device, familiarized with its electronic and mechanical aspects, and then given basic drills and exercises designed to acquaint him with the function, limitations, and potential of the device. At the very outset, he is impressed with the fact that he has natural perceptive attributes, that the mobility devices do not replace them, and that they are not substitutes for them, but are supplementary to what he already has going for him.

Integrating the Information From the Device

As the trainee moves progressively from one level to the next in his training, he learns, quite conclusively, that his success in using the mobility device optimally will be determined by the degree to which he is capable of perceiving the signals, interpreting them, and integrating this information into his basic orientation and mobility travel patterns and life style.

After leaving the controlled training center area, the trainee is given travel experiences in familiar and unfamiliar areas of residential, small business, rural, and city settings. Some of this travel is done with the trainee's primary travel tool. Routes are selected which offer varied and rich sensory targets for the mobility devices and abundant sources of information for the user.

In the residential areas, some of the typical kinds of targets are hedges, fences, walls, trees, mail boxes, open gates, garages, and houses within device range; cars parked across the sidewalks; light, telephone, and sign posts at street crossings and alleyways; light auto and pedestrian traffic; and gas light posts.

In the small business districts, there are wider sidewalks, buildings bordering the pavement, bicycles, baby carriages, shopping carts, railroad crossings, parking lots, wide driveways, outdoor telephone booths, service stations, parked cars, and entrances to business establishments.

Business area travel offers such things as traffic-controlled intersections, regular and irregular building lines, large parking lots, heavy auto and pedestrian traffic, bus stops, public transportation, and parking meters, to name a few. Travel experiences in malls can be varied and sometimes quite complex and they are good places to use in adverse weather if they are enclosed.

Metropolitan or city travel presents highly complex travel and sound patterns, examples of which are large buildings, very wide sidewalks, mass transit systems, underpasses, wide traffic-controlled intersections, heavy and complex auto and pedestrian traffic, low awnings, train platforms, bridges and overpasses, parks, malls, marinas, and department stores with revolving doors, escalators, elevators, etc.

Travel in rural areas can vary widely; many sections do not have sidewalks and streets must be used. Sensory information may be sparse and infrequent, but the use of a mobility aid may enable a user to remain on the street and detect landmarks rather than walk on the shoulder and encounter snowbanks, muddy conditions, etc. Trees, telephone posts, hedges, fences, driveways, mail and newspaper boxes, street crossing signs, etc. are just a very few things which might prove useful to a traveler.

ADVERSE WINTER WEATHER Travel in adverse winter weather is not easy, but travelers who use electronic mobility guidance devices feel that they contribute materially to their ability to cope much more effectively than their conventional long canes. The fact that objects can be detected and early warning given, gives the user options he cannot enjoy any other way. There are times when physical contact with objects is desired, but being able to know something is at a certain location and knowing that one need not make contact with it, gives one a much greater sense of security.

When it's very cold outside, the traveler can travel faster to get out of the cold. If it is icy underfoot, orientation becomes more of a problem and a mobility aid can help the traveler use guidelines for navigation and orientation. Mobility aids can be useful on very windy days when hearing is a problem and auto traffic sounds cannot be relied upon. At corners, where blended curbs are present, being able to maintain contact with guidelines or spot check landmarks along the way so as to maintain orientation, enables one to know when he has arrived at the corner.

Particular Uses of the Devices

There are times when help is needed and the aid can help a user locate a pedestrian or follow him across the street or down the pavement. The devices can help the user to walk parallel to buildings and use buildings and parallel parked cars as directional indicators. Occasionally during the winter months, the streets must be used for walking and the aids can be used to locate such vertical landmarks as street sign posts to indicate arrival at an intersection. On days when ice and snow cause tree branches to hang low over the pavement, the mobility aid can warn the traveler and prevent him from getting snow in his face or down his back. Devices can be useful at intersections when the snow and icy conditions might make access to normal channels difficult or impossible. The devices can be useful in detecting houses that are set back from the pavement but still within the range of the devices. The devices can be of assistance by detecting vertical landmarks when one is crossing a street and thereby prevent or correct veering. By detecting objects well out in front, the aids can help the user walk a straighter line; the farther out he is when an adjustment is required, the better able he is to maintain the integrity of his original line of travel.

Being able to detect step-downs with a mobility aid is appreciated anytime, but in ice and snow it might prevent a fall. The mobility devices can help one negotiate railroad crossings, and cross parking lots, gas stations, etc., by detecting sign posts, parked cars, and so forth. Mobility devices can help one determine the distance, size, and direction of objects and whether or not one would have enough room on the sidewalk to get past a car, for example, which extends over the main pavement. Bus signs, benches, and shelters can be located with the mobility devices and this can be a welcome encounter in very cold weather.

When the Devices Cannot Be Used

There are some conditions under which mobility devices might have to be turned off and the traveler obliged to use his long cane technique. In very heavy snow, the devices might detect the snow flakes and respond so frequently that the signals are meaningless to the traveler. In a heavy rain, use of the aids may have to be discontinued.

Perhaps the best way to appreciate the value of electronic mobility guidance devices in adverse weather is to recount an actual experience of a Binaural Sensory Aid user during a training session at Hines and to include some comments from a taped interview with one of our Laser Cane users.

THE BSA IN USE WITH SNOW The trainee was traveling along a very difficult route and demonstrating competence in integrating cane technique, travel skills, and sonic information to cope with and negotiate the snow-covered sidewalks. In some places, snow drifts had completely covered up the pavement and all previous tracks, as well as efforts to clean them. The trainee used the BSA to maintain sonic contact and establish parallel relationships with trees, hedges, etc., that he detected on the building line side of the walk; this enabled him to remain on or near the main sidewalk. When he had completed about three-fourths of his trip, his Mk I BSA lost its sensitivity and the trainee was unable to detect objects at a range of more than two or three feet. The aid was checked by two specialists and they confirmed the loss in sensitivity. The trainee tried to go on with the assignment, but could not negotiate the undefined route; he ended up in the street, at which point the assignment was terminated. On his next trip out, the trainee repeated the previous lesson with a different BSA under the same adverse conditions and did very well in traveling to his destination.

A Laser Cane User Describes His Experiences

The following is from a taped interview with a Laser cane user: "The element in travel that requires probably the most understanding by the traveler is when there is a great deal of snow on the ground and you don't have any well-defined shoreline. The ability to utilize the long cane technique will get you from point A to point B, but you're not going to be able to know when to make your right-angle turn into your particular house. Now, in my situation, where there are two rows of townhouses facing each other with roughly 40 to 45 feet in between the two rows of houses, this would normally pose a tremendous problem in picking out the right house—that's assuming that the Hines technique is used where you don't count steps—that's a cop-out! Under these circumstances, you've got the Laser Cane and every other home has a gas lamp set back seven or eight feet from what would be a sidewalk if it weren't covered with snow. So it is admissible to find your way (and I do) from one lamp post to the next with the laser beam and obviously when I get to the third lamp post, that's mine.

"Now the spindle or shaft on the lamp post is very thin, so it's possible under cold conditions to miss feeling the tactile stimulation that those narrow spindles present—and I've done this. When I come to the end of the road, there are ten shallow down stairs to a lower level. I've worked my way through this snow field clear to the end, on occasions, and missed every confounded lamp post and, after I didn't know what post I was processing, the sensible thing to do was to go all the way to the end and then work my way back; because when you're at the steps, you're oriented, you know exactly where you are and I have a landmark that I can trust. Now I work my way back using the only clues I have, the three lamp posts, and again the third one is mine.

FIND A POINT OF REFERENCE "What I've learned to do is to find a reference of seven feet on each side, then I know I'm in the middle of the sidewalk. If I've been lucky and it's freshly fallen snow, there is about an inch or two of slope down from the grass to where the sidewalk is because the grass will accumulate snow and hold it that much quicker than the sidewalk. The sidewalk takes

(Continued on page 451.)

Sexual Trauma In Young Blind Children

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Abstract: *Severely disturbed blind children referred to the authors for training and therapy had suffered a wide range of sexually traumatic experiences. Citing specific cases, attention is focused on incidents ranging from unintentional direct sexual stimulation to severe intentional sexual abuse inflicted by others on the blind child. The alleviation of isolation and the alertness of parents and professionals in preventing deviant incidents is stressed. A plea is made for innovative sex education for blind children.*

■ Many references can be found to support the fact that the physically handicapped are subject to a higher incidence of psychologically traumatic experiences in early childhood, as well as later, than are children who are not handicapped (Elonen & Zwarensteyn, 1964). It is surprising, therefore, that there are very few references which *describe* the severe sexual encounters that some blind children have been subjected to with very devastating results. Several reasons account for the lack of discussion of these problems. One may be the general reluctance in the past to discuss sexual matters of any kind and, in particular, those relating to institutional management of the deaf and the blind. Second, society today, especially parents, tend to overprotect and prolong the infancy of all young children and particularly the physically handicapped. For example, children are transported to and from school and other activities, denying them the opportunity to learn independence and responsibility for their own travel. Also, very few of today's children are held accountable for the performance of real and necessary daily chores.

The young blind child, understandably, is even more overprotected (Elonen & Zwarensteyn, 1964). This overinfantilization sometimes results in the failure to recognize that physiological development is proceeding relentlessly toward maturation in spite of the overt infantile behavior of the blind child. Adults dealing with young blind children, in their eagerness to demonstrate warmth and acceptance, frequently extend the fondling stage beyond the appropriate and real period of need in early childhood. Overfondling and cuddling of the child beyond the natural state may result in unintentional overstimulation and arousal of physiological responses. Beyond this word of caution, we will not discuss this phenomenon further; neither will we touch upon the usual, normally acceptable self-exploration and self-stimulation and masturbation observed in all children.

PERSISTENT PROBING IS NEEDED

The primary purpose of this discussion is to focus attention on the direct sexual stimulation and, in some cases, the severe sexual abuse inflicted by others on the blind child. Among the severely disturbed blind children referred to us for training and therapy, an unexpectedly high percentage had suffered a wide range of sexually traumatic experiences. The revelation that these experiences had occurred came only after prolonged therapeutic contacts in which exceedingly veiled comments or oblique references made by the child were carefully probed. Not only were there no indications of such experiences to be found in the case histories, but the child himself somehow had either repressed the incidents or found it expedient to allow them to surface only in disguised and veiled or distorted expressions. It was, in fact, these distorted communications which pointed to the need for further investigation. In all cases, persistent investigation revealed corroborating evidence that these were actual occurrences and not merely sexual fantasies (Blos & Finch, 1974).

Sightlessness in and of itself makes the blind child especially vulnerable to sexual advances from others. First of all, too many of them have been excluded from the usual stimulating social experiences in which sighted children are automatically included. Because of this poverty of experience, he accepts whatever opportunities for stimulation are offered to him without being able to afford to use discrimination. Any personal contact, or the inclusion in any activity is preferable to being left out and ignored. Second, because of lack of vision, he is unable to pick up many of the cues as to what is socially acceptable behavior. To the sighted child, these signals are constantly being visually fed by parents and others. We tend to forget the impoverishment that the blind child endures because he cannot absorb all the incidental learning that the sighted child receives so easily and constantly, merely through the casual and visual observation of his environment and culture. Consequently, the blind child sometimes unknowingly and unintentionally behaves in a provocative way that arouses erotic responses from others, and therefore becomes the victim of his own unawareness.

Victimization of Blind Persons

Another factor in the vulnerability of the blind child to sexual assault from sighted persons is the general underlying attitude of too many sighted individuals that categorizes the blind as subhuman and therefore fair prey for taking advantage of in many ways (Scholl, 1974). Even the courts have sometimes acted as if a crime committed against a blind individual is less serious than a similar one committed against a sighted individual.

In those cases where an individual unknown to the child has sexually molested him, the child's sightlessness makes it more difficult to identify his molester. This is doubly so if the child also has communication difficulties.

Sexual acts against young blind children occur in various ways. Among those children seen in therapy, probably the least aggressive act that was uncovered began as roughhousing or wrestling and developed into sexual arousal and exploration. More serious in traumatic effect have been those cases where sexual seduction by an older sibling occurred and in many cases was prolonged and became habitual. Still more formidable were the cases in which the young blind child was sexually abused by an adult. The following cases were selected to illustrate the types of sexual encounters suffered by blind children.

CASE HISTORIES Roy was a tall, gangly 13-year-old boy totally blind, who was referred to us because of a fairly recent vocal tic. He constantly uttered a grunt-like sound through his lips. This was exceedingly annoying and disturbing to anyone around him. In the psychological examination one gradually became aware that the sound might be an actual word or an attempt at some type of verbal communication. Because of his blindness, the examiner was able to get very close to the child's lips without his being aware of it, and clearly distinguished the word "fuck" being repeatedly emitted.

In further sessions, it was revealed that the boy lived on a cattle-breeding farm, and an older sister, perhaps intrigued by what went on in the breeding process, had initiated sexual activities with her younger blind brother. Apparently the boy was totally unprepared not only for this initial contact with a female body but also for his own physiological responses. His lack of education and sexual information is typical of blind children. Only recently has the importance of sex education been openly discussed (Foulke et al., 1974). Having been forced into secrecy as well as threatened with severe punitive measures by his sister, his sense of shock at these new sensations was compounded with feelings of guilt and fears of physical harm. Because he had no acceptable way to discharge the effects of these anxiety-producing and traumatic events, he used this veiled form of uttering a forbidden word to escape his predicament.

Alice was a nine-year-old child totally blind from birth, with severe emotional and learning problems. She had been born prematurely, and in early infancy had suffered physical injury in an accident. Among her difficulties was restlessness and an inability to concentrate. As a way of gaining attention, she affected a whiny, squeaky voice that was irritating and provoked reprimands. She had long beautiful hair which she continually tore out by the roots to the point where she had a large bald spot. In the course of therapy she was able to describe how an older brother had several times engaged in sexual activity with her while the mother was away from the house. On further investigation it was possible to establish the timing of these events with noticeable regression in her behavioral patterns, thus reaffirming the idea that sexual aggression had produced traumatic repercussions.

"PLAYING HOUSE" A case parallel to the above was that of Mabel, an overgrown ten-year-old girl with many emotional problems, also totally blind. Mabel's references, in therapy, to "playing house" aroused suspicion that she was not describing the usual activities of such play. Further probing brought out the fact that Mabel's brother had used the term "playing house" to describe what he was doing, namely, playing with her sexually. Because of her physical precocity which made this more of a pleasurable experience than in other cases, and because it fit in with her other emotional needs, these experiences seemingly were not as trauma-producing as they usually are.

Phillip, a totally blind boy, was a very disturbed, very hyperactive four-year-old when first seen. During several years of therapy and placement in a class for emotionally disturbed blind children, he made considerable progress. At about the age of ten he reverted back to his earlier, extremely disturbed behavior, and it became increasingly difficult to manage him in a classroom situation. During this period of upheaval he began to ask some pointed questions about the female body. When questioned further it developed that an older sister had indulged in sexual activity with him—for which he, again, was totally unprepared. His behavior became so unmanageable that it became necessary to exclude him from school.

Attention-Getting False Accusations

Peggy came from a very disturbed, neglectful, brawling home situation. She was a verbally precocious eight-year-old, totally enthralled with music, but bored with academic life. She was verbally and physically abusive to her peers, her chief method of attack being to claw her classmates. She had some periods, however, of relative calm and was being contained in a classroom. In one of the therapeutic sessions, she described a sexual attack by a senile male relative which was later confirmed. Before this episode could be therapeutically handled, she discovered that she could draw attention to herself by falsely accusing other men of sexually assaulting her. She created such chaos with her accusations that she was no longer manageable and became home-bound. At home the accusations were then directed at male family members so that she could no longer be tolerated and had to be institutionalized.

Claudia was an attractive, intelligent, and reasonably well adjusted 14-year-old when she reported a reluctance to go home. After much probing she admitted that her father regularly seduced her when her mother left the house. The aftermath was that she became disturbed and sought refuge in an early, unsuccessful marriage.

ATTACKS AT A SCHOOL In the case of Hans, a totally blind boy, sexual attack had ravaging effects. He was first seen as a poorly stimulated, poorly functioning five-year-old. The boy and his parents received therapy for a period of time, during which there was marked improvement. He was then placed in a school situation where progress continued. Suddenly, the boy's pattern of growth was reversed for no apparent reason. He became severely disturbed and lost most of the gains he had made. A few years later it came to light that a member of the school staff had sexually misused several blind children, including Hans. Meanwhile, Hans had become extremely self-abusive physically as well as nonfunctioning. He had to be institutionalized.

A case which paralleled Hans and even occurred under the same circumstances was that of Matilda who was first seen for evaluation at the age of 3½. At that time she was a beautiful, dainty child, although she had been the victim of premature birth and retrolental fibroplasia. She was functioning adequately in only some areas. Motor skills, for instance, were better than average. Her parents were able to carry through some of the suggestions that were given to them and she was making some progress. She was placed in the same private school as Hans. When she was seen for evaluation two years later, she was hardly recognizable. Matilda had regressed in functioning, was withdrawn, uncommunicative, and extremely self-punitive physically. At this time she had to be institutionalized where she deteriorated further. Her physical aggression toward herself extended also to others and masturbatory practices became extreme.

From the above cases, it can be seen that sexual misuse of the young blind child can range from well-intentioned but inappropriate overfondling, all the way to active and intentional sexual abuse. Likewise, the child's reaction to sexual experience may range from mild pleasure in the discovery of a new form of breakthrough to personal contact and relief from isolation, all the way to psychotic breakdown.

PREVENTING TRAUMATIC EXPERIENCES To prevent the gross pathology following abnormal sexual experiences, it is vitally necessary that the isolation of the blind child be alleviated through social stimulation, physical activity, and mental and emotional enrichment from the day of birth on. If he becomes an adequate, well-adjusted individual who is acceptable to himself and to others, then isolation, with its destructive and hopeless forces, will be routed and the need to accept the self-serving overtures of others will not arise.

In addition, parents and others concerned in the welfare of the blind child must be alerted to and watchful for dangers that may threaten his normal development. They should prevent the deviant event rather than allow it to occur and then, with misdirected righteousness, punish. They should explain rather than ignore physiological changes and emotional needs.

Educators must not procrastinate further in their plans to promote sex education. The area has been ignored or skirted for too long; there has been much talk but very little action. Only a few have been at all innovative in their attack of this very difficult problem.

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Exemptions for Directory Assistance Calls

The New York Telephone Company began charging for directory assistance calls on September 1, 1975. However, the company will arrange to exempt from charges the calls placed by persons who are unable to use the telephone directory because of visual or physical disabilities.

Information on how to apply for residence or business service exemptions may be obtained by phoning New York Telephone's Customer Service Bureau at (212) 395–2571.

Leader Dogs for the Blind Gets a Presidential Puppy

"Liberty," a Golden Retriever owned by President Gerald Ford, has given one of her puppies up for adoption to Leader Dogs for the Blind, Rochester, Michigan. The puppy will be raised by Ms. Lisa Jensen of Kalamazoo until it is about a year old, when it will be placed in a four-month training program at Leader Dogs. After graduating from the training program, the young retriever will be assigned to a blind person and become a working guide dog.

Work Evaluation of the Visually Impaired: A Perspective

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Abstract: *Work evaluation is defined as work and work-related observations made in order to formulate definitive statements about an individual's work potential. The Clawson Work Sample Test for visually impaired and blind persons, designed to reflect actual jobs in industry, is described. It is stressed that individual differences and needs in the evaluation process be considered. Situational assessment and transitional employment are discussed as part of a comprehensive program.*

▪ Students traditionally fear tests because they know that, under most conditions, tests are judgments of competence or incompetence. Often the line drawn between these polarities is quite harsh—a score of 75 is "pass" and a score of 74 is "fail." Thus, "testing" is the villain in rehabilitation because of our societal attitude toward the term.

A term has emerged in our field having to do with measurement, as does the term testing; it is *evaluation,* meaning *to determine or to estimate.* Definitions of the term *test* range from *obtaining a value* to *undergoing an ordeal.* Lest one think I am playing a game of semantics, I would emphasize that the field of rehabilitation has dealt traditionally with determining an individual's strengths, despite his limitations. In this context, "evaluation" is more meaningful than "testing" in describing functional behavior.

In some sectors, testing is considered to be the basis for evaluation; that evaluation consists of a series of tests. I consider work evaluation to be made up of work and work-related observations made in order to formulate definitive statements about an individual's work potential. My bias is not to test individuals but to engage them in an evaluation process.

The visually impaired or blind client has the need to know his strengths; as do we all. There are some blind persons who are able to find employment without the intervention of rehabilitation service agencies, including rehabilitation facilities, but the percentage of persons in this category is small, and the need for effective vocational and work evaluation programming is significant.

COORDINATED EFFORT IS REQUIRED

Quality work evaluation for the visually impaired requires a coordinated effort between rehabilitation counseling, facility, and placement personnel. Occasionally, comprehensive programming for the visually impaired is found in one agency, but it is often the case that even within one comprehensive center the client suffers from "referral fatigue," being sent from the DVR district office to a facility for vocational evaluation, to a training site, and back to DVR, it is hoped, for placement.

A better method for developing effective work evaluation programming is to examine the tools and techniques available, and then chart out a rational course for providing integrated services. There are few batteries of work samples available for visually impaired or blind clients, but an outstanding one is the Clawson Work Sample Test (CWT), constructed to reflect a simulation of actual jobs in industry. Its developer, L. E. Clawson, investigated many industries to locate jobs that the blind could perform, and whose tasks could be standardized.

Five CWT work samples were developed, primarily at the Murray B. Allen Center for the Blind in Salt Lake City, Utah. They consist of the envelope, the vial, the catheter, the valve, and the washer work samples. The catheter and valve work samples have the best face validity because they are jobs actually existing in industry. The remaining three CWT work samples *simulate* jobs in industry. The envelope, vial, valve, and washer work samples consist of subtests for assembly and disassembly, while the catheter work sample consists of four subtests (needle, sleeve, final assembly, and disassembly). The envelope work sample requires approximately 20 minutes to complete, while the average completion time for the remaining work samples is 55 minutes. The

> **“Adequate sensory, educational, social, and psychological workups should be undertaken prior to work evaluation, and the results used as a guide for detailed individualized observation.”**

CWT requires a range of dexterity from gross to fine movements. Test-retest reliability coefficients for the CWT average about 0.90.

Work samples developed on industry jobs have the advantage of being high in face validity and criterion-related validity if industrial norms are established. The major disadvantage is that these work samples may become obsolete if the jobs they represent are terminated within industry. The CWT has a healthy combination of industry-based and non-industry-based CWT work samples, envelope, vial, and washer, which relate highly to jobs requiring gross and fine hand and finger manipulations with the requirement of counting parts.

Other work samples modified for use with visually impaired individuals include the clerical work samples of the TOWER, JEVS, and Singer/Graflex formats. These deal mostly with administration and instructional aspects of the work sample, and there is little evidence to support the success of these modifications in evaluating the vocational potential of the visually impaired.

Since there are some work evaluation tools available for the assessment of the vocational potential of the visually impaired, how do they relate to their specific needs? Work evaluation for everyone is basically an observational approach. For the visually impaired and severely disabled client, observations are complicated by the twofold necessity of observation of the client on the work sample battery itself, and observation of the client within a total environmental situation. Work evaluation permits observation of a visually impaired person's abilities as he enters a new situation, in addition to his ability to improve with experience. A primary requirement in assessing vocational potential is that sufficient time is taken for observation under varying work-related tasks and situations.

INDIVIDUAL DIFFERENCES AND NEEDS It is imperative too that individual differences and needs of the client be considered in the evaluation process. Included should be a knowledge of the degree of visual impairment, a determination of optimal visual reliance, a recognition of the tactual aspects of work samples, and an acknowledgement of the part played by fatigue.

Degree of visual impairment creates a problem in standardization of administration of work samples. The delicate interplay of partial sight and the other senses, *visual interplay*, should be recognized and accentuated by the evaluator. Over- or under-reliance on partial vision can only be eliminated to the client's advantage after his performance is observed over sufficient time and varying situations.

It is our nature to use what we have, and the partially sighted client has that need as well. In this context, work evaluation should be guided toward the optimal visual reliance. Work evaluation as an observational technique should help partially sighted clients learn *when* they are most effective in using and not using their residual vision. The same interplay cannot be assumed for each client. Work evaluation should be an intensely discriminating and highly individualized approach to determining work potential.

Visual interplay for the totally blind is not an issue, but work samples should be developed which possess a standardized approach to guiding hands, and administered only after a number of preset trials.

Tactual configuration of objects is important. Most work samples should be developed on the basis of a job analysis, and should reflect approximately 50 percent of the major tasks of the job in order to be considered valid. The work sample developer should also insure exposure to varying objects, different from those required on the job—an approach furnishing an important index of tactile discrimination ability which may be improved over time.

COPING WITH FATIGUE Fatigue is a problem for all in work evaluation, but for partially sighted individuals, visual interplay may cause excessive fatigue. Rest periods should be provided. However, fatigue does provide the evaluator with information on optimal work-time on particular tasks, as well as providing the client with information which might help reduce the reliance on vision, if performance is not appreciably affected.

Special oral and hand-guiding instructions as well as braille instructions and equipment (gauges, micrometers, scribers, etc.) may be used in the work evaluation process. However, it should be remembered that the administration of instructions should be separated from the timing of the performance on the task. The ability to comprehend instructions should be taken into account, but performance improvement is the major concern which makes task execution the dominant measurable component. It must be remembered that employers are inclined to hire persons who can adapt to competitive jobs with a minimum of special instructions and equipment identification.

Innovation Needed in Work Sample Development

Effective work evaluation programming, emphasizing the requirements mentioned above, demands innovative work sample developers and evaluators, but it does not start or stop there. Visually impaired persons should be referred to a facility with the highest confidence that they will be helped to find vocational strengths. The client should be aware of the objectives of the referral. Adequate sensory, educational, social, and psychological workups should be undertaken prior to work evaluation, and the results used as a guide for detailed individualized observation. The work evaluator should work closely with placement specialists and industrial personnel to facilitate the development of an evaluation which closely reflects the actual proposed work environment. To say the least, a coordinated effort is necessary to provide a comprehensive program.

SITUATIONAL ASSESSMENT A total approach to work evaluation for the visually impaired cannot be summarized unless the technique known as situational assessment is included. Rehabilitation counselors should be cognizant of the types of information that work samples can provide for their clients. In addition, they should look further for information which can bridge the gap between the facility work

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Assessment of Blind Students' Conceptual Understanding

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Abstract: *Responses to a questionnaire sent to teachers of the blind demonstrated the need for a method for assessing blind students' conceptual understanding. Assessment should encompass verbalization of the concept, performance or demonstration of the concept, and application of the concept to the environment. An assessment chart enables the teacher to draw a deficiency profile and develop remediation in that area.*

■ Many teachers find it difficult to offer meaningful instruction in conceptual development. The problem was highlighted by the answers given to questions submitted to teachers of the blind in California.

"Do you have specific lesson plans developed in the area of conceptual development?" Yes: 26. No: 59.

"Do you feel that specific lesson plans in the area of conceptual development are desirable?" Yes: 68. No: 17.

"Do you have a specific time set aside in your teaching schedule devoted to students' problems in the area of concept development?" Yes: 36. No: 49.

"Do you feel you need reference material regarding sources of literature and teaching approaches in the area of concept development?" Yes: 78. No: 7.

"Would you attend a teacher-training conference devoted to the topic of conceptual development?" Yes: 72. No: 13.

TEACHER-TRAINING CONFERENCE

A teacher-training conference was conducted at which time it was determined that some sort of assessment methodology was needed. Many expressed the opinion that the entire area of concept development was difficult for them. Teachers would like to place more stress on concept development but did not know where to begin. It was difficult to know what concepts the students already understood and which ones needed to be taught.

Concept development is a process of assessment and, if necessary, remediation of the student's mental awareness of the existence of an object or concept in the environment, and an accurate understanding of its characteristics, location, and function.

The definition focuses first upon assessment which encompasses three important steps: verbalization, performance, and application. First, can the student give an accurate verbal definition of the concept? Using the concept of parallel as an example, the student may say that parallel means side by side but not touching, equidistant at all points. Most teachers would accept this definition, and mistakenly stop their assessment at this point. Correct verbalization is only the first step of the triad.

Second, whenever possible it is important to have the student perform or demonstrate the concept. Give the student two rulers and ask him to place them in a parallel position. There are many instances when the student can verbalize a concept correctly but cannot demonstrate it. The teacher should now be ready for the very important third step in the assessment effort.

The third step is to ask the student to make some application or relate the concept to the environment around him. For example, does he understand that the sides of his desk are parallel, or that the sides of a hallway and the grasslines along a residential sidewalk are parallel? The student should be able to relate the concept to his environment.

ASSESSMENT CHART

The assessment triad has been used to formulate an individualized assessment chart. The first column lists the concepts to be assessed: parallel, perpendicular, round, arc, middle, diagonal, 90-degree turn, 180-degree turn, 270-degree turn, 360-degree turn, about face, north, south, east, west, grid pattern, divided highway, median strip, detour, traffic light, crosswalk, fire hydrant, lamp post, landmark, right of way, pedestrian, gutter, curb, corner, driveway, city block, northeast corner, southeast corner, northwest corner, southwest corner, sidewalk, grassline, broken sidewalk, street, one-way street, traffic lanes, intersection, traffic surge, and passing.

In the second, third, and fourth columns, the student's verbalization, demonstration proficiency, and ability to apply the concept to the environment, respectively, are each rated as good, fair, or poor. Not every concept can be treated on these three separate levels. For these exceptions, the tester can add personal comments in the fifth column.

A deficiency profile can be drawn from the results of an assessment chart and is an important first step toward the preparation of an individualized program of remediation for the particular student. The teacher can clearly see what concepts are not understood and what concepts are understood only on a verbal level or perhaps only on a performance level.

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Work Evaluation

—*continued from page 444.*

station and the real work situation. The technique of situational assessment is an important adjunct in this search. Like all the tools and techniques of work evaluation, situational assessment is helpful in determining the vocational potential of all clients. It is, however, especially helpful for determining the vocational potential of visually impaired clients because of its focus on the multidimensional work environment.

> The essence of situational assessment is that the client is placed in a real (though controlled) work situation where under close supervision of trained evaluators, he works with other employees on contract jobs for real wages. In this setting, evaluators can observe the client in a variety of situations and analyze and interpret his response. For example . . . tasks assigned to subjects, their physical location relative to other workers, the amount and style of supervision, level of financial remuneration, and a wide variety of other critically significant social and technological aspects can be varied. . . . The purpose of such an environment is to enable those concerned with evaluation to vary systematically the elements of the work situation and thus to provide concrete behavioral evidence of the problems clients have in adjusting to work settings. . . . It is possible for sensitized observers to systematically gather data about client's performance and yet, these data are not always used. . . . Considerably more attention is given to the fact that work involves a social as well as a technical environment. (Button & Miller, 1972, pp. 108–109.)

With the visually impaired, this technique should be extended to include observations of situations involving visual interplay and sensory compensation to accomplish the demands of the social and technical work environment. There are several approaches to documenting the results of situational assessment too lengthy to go into here, but they include job analysis and behavior analysis documentation strategies.

Further work evaluation programming for determining the vocational potential of visually impaired clients calls to mind an innovation formulated in mental health rehabilitation. Called *transitional employment* or TE, it is a program strategy in which an agency seeks jobs from employers and guarantees that the job will be done. These jobs are high turnover, hard-to-fill jobs. Agency personnel are responsible for training the client in that job and supplying substitutes for the client when he cannot appear or decides to move to another (hopefully better) job. In this sense, the job is transitional and the agency employee acts as a "prosthetic device" for the client. TE jobs are rarely full-time ones. As many as three clients may work the same job during different portions of the workday. However, it is real work with real experience and real wages, not to mention a real employment history. TE could become a valuable strategy in work evaluation. An evaluator skilled in service to these individuals would serve a multi-faceted role in placement, training, and advocacy.

SOME CONCLUDING REMARKS

Rusalem (1972) lists 13 conceptions for improved programming for the blind, centering around the need for coherent rehabilitation service for dependent and semidependent blind persons. He points out that service for these persons is often protective and misses many of the humanizing influences occurring in other sectors of human service. Minority groups have launched upon a social revolution of humanizing action which cannot be ignored by the blind and those who work with them. All persons need a self-directed, identity-rich experience from which social barriers can be overcome. In this spirit there is the realization of positive change in all our lives.

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The Social Acceptance of Blind High School Students in an Integrated School

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Abstract: *The purpose of this study was to determine the academic standing and social acceptance of nine blind students studying in a regular high school. It was found that their school marks were average, and that they were well integrated into the social framework of their classes. However, there was evidence that as length of exposure to the blind students increased, their acceptance by sighted classmates decreased.*

■ Although the education and concomitant socialization of the blind child have not been the focus of as much investigation as it has been for the retarded child or for other exceptional children, there has been a considerable amount of discussion of these areas (Dunn, 1973; Lowenfeld, 1971b, 1974). The data concerning school adjustment and acceptability inform us, for example, that: 1) as rated by high school students, blind individuals are situated mid-range on the acceptance continuum for a variety of handicaps (Jones, Gottried, & Owens, 1966); 2) in general, young children readily accept their blind schoolmates (Lowenfeld, 1974); 3) although according to Bateman (1964) there seems to be no conclusive evidence concerning the effects of exposure on attitudes toward the blind, it has been reported that increasing social exposure to blind children, both in terms of time and number known, produces parallel positive increases in judgements concerning their abilities (Bateman, 1962; Steinzor, 1966); and 4) higher sociometric status has been shown to be related to higher qualitative levels of offered physical education programs (Nezol, 1972).

In the realm of academic progress, there have been assertations concerning the benefit that would be accrued to the blind child were he to be placed in a regular school setting (Lowenfeld, 1971a). However, there is no data to support this.

INTEGRATION IN ISRAEL In Israel, there have been commendable efforts for almost 20 years to include the blind child in the national educational system. Administrators and teachers have endeavored to furnish blind students with adequate and relevant educational provisions specific to their needs, including braille reading materials, special tutoring, and tactual/haptic substitutes for visual materials. Yet, given this extended presence of blind children in the national schools, little is known empirically concerning either their social adjustment/acceptance or their academic progress relative to their seeing peers.

This study, therefore, represents a first step in obtaining data concerning blind children who have been placed in regular schools in Israel. Under investigation are the relationships between such pertinent variables as actual and perceived school achievement, and friendship ties and exposure.

Five intact classes within one high school in Jerusalem were identified as having blind children as class members. This government-run religious school is located in an upper middle-class neighborhood and accepts males only. The classes include one in grades nine, ten, and eleven, and two in the twelfth grade. In grade nine there were 30 sighted and one blind student; in grade ten, 32 and two; in grade 11, 32 and one; in grade 12a, 31 and three; and in grade 12b, 31 and three. Thus the total sample consisted of 155 sighted and nine blind students.

45-MINUTE TESTING SESSION Before any testing was begun, the experimenter recorded the average first semester grade for each of the students. Then, in each class, after being introduced by the school principal, the experimenter informed the class that the Hebrew University was carrying out research on school achievement and ways of improving it. He told the students that their cooperation would be greatly appreciated. No problems were incurred during the 45-minute testing session in any class; the students seemed to have no difficulties in understanding and carrying out the instructions.

	Frequency			
Class	Low			High
9	6.6	6.7	6.7	7.1
10	6.5	6.9	7.0	7.5
11	5.8	6.5	7.2	7.6
12a	6.6	6.7	6.7	7.1
12b	6.2	6.1	6.9	6.7
Mean	6.1	6.6	6.8	7.2

Table 1. Average School Marks According to Frequency of Best Friend Choice

	Frequency			
Class	Low			High
9	7.3	6.5	6.1	5.8
10	7.0	6.9	6.6	5.1
11	6.6	6.6	5.4	5.8
12a	7.0	6.9	6.0	5.9
12b	6.8	6.3	5.6	5.2
Mean	7.0	6.6	6.0	5.7

Table 2. Average School Marks According to Frequency of Workman Rejection

A sheet of paper was distributed to each pupil on which was listed the names of his classmates. Along the top of the sheet was a linear, evenly-spaced, seven-point scale. The experimenter asked the class-members to relate to each of the names separately and to decide to what extent he would like to work in school with this person if it were the case that both their final school marks would be an average of the marks earned by each. A check by the number "7" indicated maximum desire to work with a particular person. On the scale, the words "very much want" appeared (in Hebrew) next to the number "7." Checks next to the numbers ranging from "6" to "2" indicated decreasing levels of desire to work with this person and were clearly labelled in words. A check by "1" stood for a feeling of indifference (labelled as such). The pupils were then asked to write how long they were acquainted with their fellow classmates (accurate to the nearest half year). Finally, before collecting this sheet, the experimenter asked the pupils to list at the bottom of the page the five students that they would least prefer to work with. (No mention was made here of choosing according to perceived or known school ability.)

After this sheet was completed and collected, a second one was distributed. Once again the names of all the students and the seven-point scale appeared. The class was told to indicate the extent to which they liked each person in the class. A check by the number "7" ("very much like") indicated that this person was very much liked. A check by any of the numbers from "6" to "2" indicated lesser degrees of liking (and were appropriately labelled). A check by "1" indicated apathy toward the person. Upon completion, the experimenter asked the students to list at the bottom of the page their five best friends in the class. The sheets were then collected.

THE DATA ACQUIRED To summarize, the data of this study consisted of the results stemming from six measures: 1) the scaled level to which each student expressed desire to interact academically with each of his classmates; 2) the scaled level of liking expressed by each student toward his classmates; 3) the five classmates selected as best friends; 4) the five classmates rejected as workmates; 5) the length of time classmates had known each other at the time of the study; and 6) the actual school marks of the pupils at the end of the first semester (the study was carried out at the beginning of the second semester). In order to analyze these data, several manipulations were carried out on the raw scores. With respect to the first two measures, the scaled interaction and liking scores, each individual was assigned the average rank of all the rankings he received. For example, each of the 31 pupils in grade nine received 30 ratings on each of these two scales. The particular score assigned was the average of these 30 ratings. With regard to the third

Table 3. Overall Class Data

Class	No. of Students	Class Marks Range	Class Marks Mean/S.D.	Best Friend Choice Range/Mean	Scaled Liking Range/Mean	Workmate Rejection Range/Mean	Scaled Desire to Interact Range/Mean
9	31	4.1-7.8	6.5/1.2	0-12/3.2	2.6-5.3/3.7	0-16/1.6	2.7-5.3/3.8
10	34	5.0-8.5	6.7/1.1	0-12/3.2	2.4-5.0/3.3	0-13/2.5	2.1-5.1/3.4
11	32	4.0-8.0	6.0/1.3	0-13/1.8	2.8-5.1/3.8	0-12/1.3	2.9-5.4/3.0
12a	34	4.0-7.8	6.3/1.2	0-14/2.5	2.9-9.8/3.7	0-16/2.4	2.4-5.1/3.4
12b	33	5.4-8.0	6.8/1.0	0-9/3.5	2.7-5.3/3.8	0-17/1.9	2.4-5.6/3.8

and fourth measures, each individual was assigned a score equal to the total number of times he was selected as best friend or rejected as a workmate. On the basis of these frequencies the range and distribution of scores were plotted within each class. The length of time each class member was known was also an average score, i.e., the average length of time a pupil was known by his classmates. The school marks were, as stated above, the average marks of the first semester.

As a rough check of the validity of the student ratings and choices, average student academic marks were calculated along the frequency distributions of the two measures—number of times chosen as best friend and number of times rejected as a workmate. If these measures are to be seen as valid, then it might be expected that as frequency of best friend choice increases, student marks would also increase; and that as frequency of workmate rejection increases, student marks would decrease (Johnson, 1950).

Specifically, the ranges of these two measures within each class were divided into four divisions of two, three, or four frequency points (depending on the width of the range), and within each division the average academic mark was calculated. Except for grade 12b, average marks increased consistently as the frequency of best friend choice increased (Table 1). Except for grade eleven, average marks decreased consistently as the frequency of workmate rejection increased (Table 2). These results for the most part conform with the above expectations and therefore lend validity to the student-rating measures. (Spearman rank correlations were computed between the best friend measure and the scaled liking score within each class. All were above 50 and significant beyond the 0.05 level of confidence. Likewise Spearman correlations were computed between the workmate rejection measure and the scaled level of desire to interact measure. These correlations were all zero order; this will be discussed below.)

The range of student marks in each of the five classes show that with respect to the highest possible mark of ten, none of the students were either outstanding achievers or underachievers. With respect to the number of times any individual was chosen as best friend, the range and median of the scores reflects the fact that within each class the distribution of number of times each individual was chosen was highly skewed in a positive direction. That is to say, the vast bulk of students were infrequently chosen as best friends with only one or two conspicuous stars appearing in each class. The average scaled liking scores presents a similar pattern. Although not as skewed as the best friend measure, they consistently show that no student was given a predominantly high average rating (Table 3). (The appearance of scale rank "1" was virtually nil for both the best friend and workmate rejection measures and thus disregarded in all analyses.)

With respect to student rejection, the distribution of the number of times any student was rejected as a workmate was also a positively skewed distribution. The majority of the students were infrequently rejected, with only one or two being soundly rejected as workmates. In the scaled level of desire to work with any particular student, once more a positively skewed distribution was revealed (Table 3). The majority of the pupils obtained low average scores with only one or two per class being clearly rejected as workmates. This would seem to imply that very few of the students regarded their classmates as possessing academic ability of a high enough level to warrant their choosing them as workmates. In light of the mediocre level of the academic marks, this would seem to be a realistic appraisal.

BEST FRIEND/ WORKMATE REJECTION For the sake of data integration and clarity, the frequency distribution associated with the best friend and the workmate rejection measures within each class were crossed onto each other to form 4x4 grids. Specifically, the frequency divisions that were created for the earlier validity check on the basis of these two variables were again employed and the four-fold frequency divisions from that check were cast into 4x4 grids. Additionally, the average academic mark was calculated for each cell in the grids. As the grid patterns for all five classes were highly similar, only one, from grade ten, will be presented. About one-half of the students are situated in the lower right of the grid, thus indicating that within the class most of the students were neither frequently chosen as best friend nor frequently rejected as a workmate. Also, visual inspection reveals a trend for average marks to decrease from upper right to lower left. That is to say, decreases in frequency of best friend choice and concurrent increases in frequency of workmate rejection are simultaneous to decreases in average student academic ability (Figure 1).

THE NINE BLIND STUDENTS An examination of the nine blind students and their position within the general class framework shows that none of their academic marks fell more than one-half standard deviation below the class mean (Table 4). This would indicate, firstly, a high degree of successful integration into the academic program, and secondly, a high level of success on the part of the school principal and teachers to provide the blind students with the academic materials suitable to their needs as blind learners.

The best friend measure revealed that six of the nine students fell below their respective class medians in terms of the number of times they were chosen as best friends. Although apparently a sign of low social status, this does not especially mean that these youngsters were rejected, as is clear upon inspection of the scores stemming from the average scaled liking measure. Seven of the nine were above the class median, reflecting the fact that even though they were not frequently selected as best friends, they were yet held in relatively high favor by their class peers. Further, because most students were ranked low on the frequency range of the best friend measure, it would mean that the blind students were accorded no unique status within the class framework.

Looking now at the number of times the blind students were rejected as workmates, it can be seen that seven of the nine were above the median of the class range. That is, they were rejected as workmates relatively more often than their classmates. With respect to the measure concerning scaled willingness to interact, six of the nine were at or above the class median; this indicates that, according to perceived ability, the sighted students were willing to interact with their blind peers. It is, however, impossible to invoke this measure to explain the apparent rejection of the blind students as revealed in the workmate rejection measure. This is the case, for as reported above, the workmate rejection measure is not correlated with the scaled willingness to interact measure. This lack of correlation would imply that the two measures reflect independent attitudes.

Given the wording of the instructions delivered by the experimenter, it seems plausible that, with respect to the blind students, the sighted students inferred the workmate

Frequency of Workmate Rejection

	High			Low
High	0	0	3 6.5	3 8.5
Frequency of Best Friend Choice	0	3 6.3	6 7.4	18 6.8
	0	8 6.5	24 6.9	12 7.1
Low	6 5.1	8 6.9	3 7.4	6 7.2

Figure 1. Grid of Best Friend by Workmate Rejection Measures, and Average Students Marks in the Tenth Grade. (The upper number in each cell represents the percentage of the total class found in that cell. The lower number represents the average student mark in that cell.)

rejection measure to mean: "Would I like to work with this person given the *technical* difficulties involved?" The scaled desire to interact measure may have been taken to mean: "Given my perceptions of this person's academic ability, how much do I want to work with him?" If this presumption is valid, it would reveal a position of reticence on the part of the sighted students. On the other hand, they are wary of working with the blind individual due to the technical obstacle (imagined or real) related to the blind condition. On the other hand, in keeping with their accurate observations of the blind students' academic ability, they would yet be willing to interact with them.

Referring back to the 4x4 grid and the location of the blind students within this grid, it can be reported that in none of the classes were any of the blind students consigned to a unique position within the class framework (Figure 1). For example, in the tenth grade the two blind students are situated in cells (4,2) and (3,3). (The first number of the pair signifies the level on the best friend measure and the second number signifies the level on the workmate rejection measure.) The cells in which the remaining seven blind students were located are: (3), (3,4), (4,3), (4,3), (4,3), (4,3), (4,3).

The final measure in the study concerned the length of time the students had known one another. In order to obtain some index of the relations between exposure to the blind students and the attitudes held toward them, a Spearman rank order correlation was computed between the average length of time each blind student was known and the scores received on the four measures: average scaled liking, average willingness to interact, number of times chosen as best friend, and number of times rejected as workmate. These correlations respectively are: −0.77 (p 0.025), −0.40, −0.61 (p 0.05), 0.51. These correlations indicate that the longer the blind student is known by his classmates, the less likely he is to be liked and the less likely others will be willing to interact academically with him. In light of the research by Bateman (1962), this was an unexpected result. She reported that with increasing exposure (both in terms of number of blind children known and length of time they were known), the sighted children of her study increasingly appraised the blind child more favorably. This difference in findings may be related to the ages of the children involved; Bateman sampled children in grades three to eight, while in this study, only high school students were sampled. One might suppose that the earlier the initial interaction with a blind child, the more favorable this interaction will be judged.

An alternative to this explanation is based upon a plot of the judgements over the six school grades included in the

Table 4. Data on the Nine Blind Students

Class	Academic Mark	No. of Times Chosen Best Friend	Average Scaled Liking Score	No. of Times Rejected as Workmate	Avg. Scaled Interaction Score	Average Time Known (1/rs)
9	6.5	3	5.1	2	4.1	0.9
10	n/a	5	3.2	8	2.7	1.5
10	7.0	5	4.5	4	3.4	1.5
11	7.0	0	3.9	2	4.1	2.2
12a	6.6	1	4.0	7	3.6	2.9
12a	5.8	0	3.4	3	3.0	3.3
12a	7.0	2	3.9	5	4.1	3.0
12b	6.3	1	4.0	2	3.3	1.4
12b	7.3	7	4.8	1	4.2	1.0

Bateman study. Bateman reported that although positiveness of appraisal grew from grades three to eight, there was a tendency for this to slacked off from grades six to eight. If one regards the results of the present study as representing a continuation of the trend found by Bateman, then not only is there a decrease in the growth of positive judgement of the blind, but with time this growth begins to diminish and eventually to turn downward.

The educational implications stemming from such a state of affairs might be: 1) although early initial experience is desirable, it is not enough; and 2) intervention at certain points in time, probably around the fourth or fifth grade and then again later around the end of primary or beginning of high school, may be crucial. The purposes of such intervention would be to prevent rejection of the blind student and/or to reverse any existing trends toward rejection and their effects.

SUMMARY AND CONCLUSIONS In summary, therefore, it can be concluded that the many technical and personal efforts on the part of the entire school staff have resulted in the academic success of the blind students, and that the blind students have made good use of these efforts. Further, these data testify to the success of placement in a regular school program and the results of preventing the reported educational retardation evidenced in special educational programs (Harley, 1973). The social status of blind students shows that they are bound into the social framework and are by no means accorded any special position outside of this framework. There is, however, some evidence that the increasing time that the blind students were in the school has led to a certain degree of rejection and a lowering of social status. One might speculate that, with appropriate prior intervention, the social acceptance of the blind students might well have been much higher than found in this study.

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about one to one-and-a-half inches of snowfall to cool down to the temperature to accumulate. Then it takes a hell of a lot of fine cane touching the snow to follow that shoreline. But with a combination of that and the Laser Cane reaching out to the lamp post, you're OK!

"Here is a good example of where long cane technique, by shorelining, is employed to maintain a parallel relationship with the landmarks and the Laser Cane is used to 'reach out' across the shoreline to locate and keep track of the landmarks as they are approached. The Laser Cane, having that outreach, is just the additional element needed to reinforce, not your touch but your hearing. Being adventitiously blind, I have had to learn how to hear—and there are gaps in it. This Laser Cane tends to fill in the gaps in my hearing and I think I am just about 70 percent as efficient in traveling with hearing and touch as a congenitally blind person is with his hearing. Now without the Laser Cane, I'm about 30 percent as efficient. Now what I've said no doubt applies to electronic mobility guidance devices in general and that may not seem like very much, but it is a tremendous improvement!"

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Games for the Development of Pre-Orientation and Mobility Skills

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Abstract: *Twelve games useful in teaching children–nursery school to junior high–the basic concepts and skills necessary for mastering the techniques of orientation and mobility are fully described. They include What's Your Name?, The Rabbit and the Fox, Simon Says, Hide 'n' Seek, The Game of War, In and Out the Windows, Relay Races, Hokey Pokey, Hit the Bucket, Over-Under Relays, Donkey Dodge Ball, and Call Ball.*

■ The following is a collection of games that can be enjoyed by sighted and visually impaired children alike. Degree of impairment is of no significance. In fact, the visually impaired child can play these games with sighted children with little if any disadvantage. Most of the games are left unmodified and are probably very similar to the games readers played as children. The remainder of the games have been slightly modified, sometimes through the use of a sound clue, so that the visually impaired child can participate free of handicap. The games range in difficulty from nursery school level to more complex games for children 12-15 years of age. Some of the games can be played in a limited space, while others require the use of a gymnasium or playground.

What all these games have in common is the strengthening of very important pre-orientation and mobility skills, such as body awareness, directionality, laterality, sound localization, sensory identification, and understanding of concepts used in orientation and mobility. The areas strengthened vary from one game to another.

Each game is fully described and then the rationale for its selection is given. Following the rationale, there are brief comments on the execution of the game, how the children received it, and particular problems encountered.. The games are listed in order of difficulty, the easiest games (for preschool children) first. These games are not appropriate for multiply handicapped blind children, especially if there is a serious hearing impairment. A moderately retarded blind child may, however, be able to participate with some success.

WHAT'S YOUR NAME In this socializing game, children learn each others' names and the concepts of right and left. No equipment is needed and it may be played in any space that is large enough to accommodate the group formed in a closed circle.

The children line up and join hands and the two children on the ends are instructed to walk toward the teacher's voice, still holding hands with the others. When they reach the teacher, these two children are asked to join hands, thus forming a circle. All of the children are asked to sit down where they are, with only a few inches between each child so that a fairly tight circle is maintained. The teacher seats herself between two of the children and asks the group if they know where their hands are. She asks them to clap their hands. Then the teacher asks if they know which of their hands is the right one and which is the left one. They are asked to raise the right and then the left. Assistance, either manual or verbal, is given to those who need it.

After this is established, the teacher initiates the game by touching the child on her right with her right hand and saying, "My name is Margaret. What's your name?" He says, "My name is Terry." He is then asked to touch the person on his right with his right hand and ask, "What's your name?" This continues around the circle until it can be done with ease by a majority of the children. The direction is then reversed and the children, using their left hand, touch the person on their left, asking, "What's your name?"

This simple game incorporates several aspects of pre-orientation and mobility skills, including laterality, body image, and sound localization. The two children on the ends of the line are asked to walk toward the sound of the teacher's voice. Once the game is initiated, all of the children must tune in to where in the circle the exchange is taking place so that they will be prepared for their turn. Children who have problems with learning right and left are identified early and can be given extra help with this before it interferes with their learning.

I found this simple game to be a good one for the first day of class. It gave me a chance to learn the children's names and to identify those who would probably need special help throughout the year. It is also good as a socializer. The children learn to identify their peers by hearing their names and voices simultaneously. It proved to be a good game for initiating the development of the right-left concept. After this game I usually orient the children to the gymnasium and the equipment.

THE RABBIT AND THE FOX This ball manipulation game, based on the game of "Hot Potato," aims at improving skill in handing an object to another person and doing so with speed and accuracy. A small and a medium-sized ball are used. Two bean bags of different sizes can be used if needed (see below).

A circle is formed in the same fashion as in "What's Your Name?" and the children are asked to sit down in place. They are told that they are going to pass a small ball around to the right and that this ball will be called "rabbit." After this is done successfully, they are asked if they can pass it faster while still being careful to place the ball accurately in the hands of the person sitting next to them. After this is practiced for a while, the person holding the "rabbit" is asked to put it down. The larger ball is then introduced and the children told that it is to be called "fox" and that it too will be passed around to the right. The children are told that there is a difference between the "fox" and the "rabbit" and asked if they know what it is. One of the children is sure to say that the "rabbit" is smaller.

The "Fox" Chases the "Rabbit"

It is then explained that the "fox" is going to chase the "rabbit" around the circle, because he is hungry. The "rabbit" will start to run away, but the "fox" will start around the circle after him. The children are encouraged to pass the balls around the circle as fast as they can so the "rabbit" won't have to be eaten up by the "fox." If the "fox" catches the "rabbit," the game is over and can be begun again; the direction of the chase can be alternated in each game.

If the children are having difficulty handling the ball, two bean bags of different sizes can be used until greater dexterity is developed. The bean bags are easier to handle, but size discrimination may be more difficult and a child may not know if he is passing the "rabbit" or the "fox." Knowing where each of the "animals" is in the chase is what the children find so exciting in this game and if there is any confusion, the thrill of the chase may be limited.

Children who toss the ball wildly, rather than taking aim in where they are placing it, should be reminded; if this fails, they are given penalty points. Three penalty points means that they have to sit the next game out.

This game helps in the development of the concept of laterality, size discrimination, and sound localization. The last skill requires that each child vocalize to the person next to him by saying "here" or "take it" as the ball is passed. This usually occurs spontaneously, but even if it does not, there is some sound as the balls are passed around the circle.

This game is usually well liked by children at various levels, but it is especially good for younger children since it does not require a great deal of skill. Children who are not tuned into what is going on continually hold up the smooth process of the passing. Children who are not aware of the direction to reach for the ball and the direction to pass it are easily identified and manual assistance can be given to them.

SIMON SAYS The game of "Simon Says" revolves around the idea of direction taking and develops the child's ability to listen, his body image, and his reaction time. It should be played in a large area such as a playground or gymnasium; there should be enough room so that the children can spread out and have enough space to be able to swing their arms out to the sides, in front, and behind them without touching another person. In fact, the children should be asked to do this and then, if necessary, reposition themselves so that they have enough room. All of the children are asked to face in the same direction—toward the "clock wall" or the school building.

A volunteer is asked for and becomes the first "Simon." He comes forward and faces all of the other children. He then is instructed to give commands to them such as, "Simon says to touch your toes." The children are instructed to follow Simon's commands, but only if he says, "Simon says. . . ." If these words are omitted, they are to remain motionless. If they fail to do this and follow the command, they are asked to sit down and the remaining children continue with the game. The teacher can act as disqualifier if Simon does not have sufficient vision to see which participants move when they are supposed to remain still. When all but one child has been eliminated, the game is over and the last person standing becomes the new "Simon."

Directions, Body Parts, Physical Movements

The commands will usually include such elements as up, down, in front, behind, right side, left side, back, high, and low. Also, various parts of the body are typically included in many of the commands. Instructions involving physical movement, such as lying down, rolling over, jumping up, turning around, etc., make the game a very active one.

The rationale for this game is obvious. It strengthens body awareness and introduces and reinforces concepts of directionality and positioning. It also teaches the child to listen carefully, since failure to do so will result in their possibly being disqualified. Improvements in reaction time can also result from playing this game. Listening and quick reaction time will be very useful to them in the development of many orientation and mobility skills.

This game is also well received by children of varying ages. The instructions can be simplified for younger children and made more complex for older children. It requires little space and no equipment, so it is a good game for classroom teachers to use whenever there is available time. The game also provides motivation for the child who acts as "Simon" to be imaginative, quick, and sly.

HIDE 'N' SEEK This traditional game of exploration and discovery can help blind and visually handicapped children to develop better sound localization and to improve their skills in trailing and free-space traveling. Since it should be played in the classroom or gymnasium, it is useful in improving the child's awareness of the physical layout of the play area. Although no equipment is necessary, soundmakers—as explained below—can be used.

The children are given directions to run and hide when the child designated as "seeker" gives the command to hide.

The Game of War — In and Out the Windows — Relay Races — Hokey Pokey — Hit the Bucket — Over-Under Relay — Donkey Dodge Ball

At first they are told to hide next to a wall. After the seeker has counted or given ample time for the children to hide, he begins his search by trailing along the walls of the room. Upon finding a child, he must identify who it is. This can be done by asking the child to give his identifying sound—a whistle, a knock on the wall, etc.—chosen by each child before the game began. The same sounds are kept throughout the period in order to avoid confusion.

If the seeker cannot relate the sound to the hider, then the hider is asked to speak. If he is identified, he is out of the game and goes to sit in a designated area. The seeker then proceeds to trail the wall and find the others, where the process is repeated. This continues until all of the children have been found. If the seeker is unable to locate someone, this person is chosen to be the next seeker. After all of the children have shown an ability to trail the wall effectively, the rules can be changed so that the children can hide anywhere in the room. In this case, the hiders are asked to make their identifying sound in order to give the seeker a clue to which direction he should walk.

This activity provides a very good opportunity for children to practice sound localization, trailing, and sound identification. Also, it reinforces what they learned in the session devoted to room orientation. If there is a ladder in the room and they realize that it would be a good hiding place, they must first be able to locate the ladder. Having the children hide along the wall gives the seeker built-in obstacles to locate and use for orientation as he trails along the wall.

Although this game is well-liked by children, they usually do not like being told that in the early phases of the game they must hide by the wall. One of the problems encountered in this game is the unimaginative child who always goes to the same spot or who does not move at all. This can be resolved by helping the child the first few times to find a good spot to hide.

THE GAME OF WAR This tugging and pushing game requires a cage ball approximately 36 inches in diameter and must be played in a gymnasium. It involves strenuous exercise and the ability to maintain an established line of direction. Also, as a team sport, it develops team spirit and the sense of cooperation.

The children are divided into two teams, designated "North" and "South." The "North" group lines up several feet away from the north wall of the gym and facing the south wall; the "South" team does the same along the south wall. The teams are now about 35 feet from each other. The teacher stands in the middle with the cage ball and calls a member from each team, individuals who are as equal in strength as possible, to the center. The two individuals in the center are told that they are to push the ball toward the opposite team. The member of the "North" team is to try to push the ball over the south goal, defended by the members of the "South" team. The member of the "South" team tries to push the ball over the north goal. In addition to trying to score a goal, each of the members in the center is to try to prevent the other from scoring against his team. They must keep in contact with the ball at all times and push the ball away from their cheering teammates.

The teacher, who acts as referee, must make sure that the ball and the two individuals pushing it do not get too close to the side walls and should position herself between the players and whichever wall they seem to be moving toward. If the players seem to become disoriented and are pushing in the wrong direction, the teacher can blow the whistle to stop the action, take them back to the center, orient them once more, and then give the signal for play to resume. If there appears to be a stalemate, a point can be awarded to each side. One point is awarded to the team whose member succeeds in pushing the ball over the opposing team's goal line. The first team to get a designated number of points, such as 20, wins the game.

Blind and sighted children can compete with each other in this game, provided that each of the players remembers that contact with the ball must be maintained. When someone loses contact with the ball and appears to be unable to locate it, the teacher should blow the whistle, stop the action, help the player find the ball, and then restart the action.

A Very Competitive Game

"War" is one of the most competitive of the games presented here, but it does not put the blind child at a disadvantage. If he is able to keep his line of direction or get clues from the two lines of cheering teams, he will have an equal advantage in overpowering his opponent. Listening plays an important part in playing this game well, as does knowing right and left, north and south, since these are often yelled out to the player who is veering. Tactual discrimination is also developed, since the player can get many clues from the tugging and pushing of his opponent.

If the children are well matched, they usually enjoy this opportunity to be aggressive and to try to win a point for their team. It is a good opportunity for the children to exercise the large muscles of the body, especially the pectoral muscles. The use of compass directions in the game provides for the reinforcement of these important clues used in orientation.

IN AND OUT THE WINDOWS The objective of "In and Out the Window" is to improve the child's awareness of his position in space in relation to others. The children form a circle in the same way as in the first game, but this time they keep their hands clasped and remain standing. One individual, the "weaver," is chosen and he is to go around the circle by weaving in and out between his classmates, ducking under their arms in the process. As he does this, the class sings, "Go in and out the windows/ Go in and out the windows/ Go in and out the windows/ As we have done before." When the song is over, the "weaver" stops where he is. If he is inside the circle, he is no longer "weaver" and another is selected. If he is outside the circle, he may remain as "weaver" for the next song. The "weaver's" position is each time determined by asking him to state whether he is inside or outside the circle. If he does not know, the teacher can ask his classmates. This concept of in and out is often a new one to the class, so it is sometimes in order, prior to the game, to discuss this concept with them.

This activity develops pre-orientation and mobility skills by teaching or reviewing the concept of in and out, by requiring the child to take notice of where he is at all times in relation to his classmates, by requiring the child to duck his head at the proper time and place through judging the distance between him and the arch of the other's outstretched arms, by reacting to what he hears and perceives, and also by learning the concept of the circle.

There is often much confusion among the children learning this game and the idea of in and out may need to be explained several times. Also the weaving is often very sloppy; some will enter the circle but instead of turning and weaving back out—more or less trailing the person being passed—they keep going straight until they hit the other side of the circle. Because of these factors, this game is not usually a favorite, which is unfortunate since it provides some valuable learning experiences.

RELAY RACES Various types of races can be used to improve the physical ability of the participants, to improve their sound localization skills, and to develop team spirit. To play, three children are named group leaders and stand in three designated areas while the rest of the class is divided into three teams. The group leaders call out to their team members who must find their way to the designated areas and line up one behind the other. All of the various races are run from this basic starting position.

The person at the head of the line is the first racer and competes with the individuals at the heads of the other two lines. Three people at the other end of the gymnasium make sounds toward which each team is to run. Each team is assigned a particular sound, such as drum, bell, and whistle. When the runner reaches the soundmaker, he must turn around and, guided by the calls of his teammates, return to his team. The next runner cannot begin running until he is physically touched by the first runner who then retires to the end of the line and sits down. When the last person returns to the team area and is seated, the race is over. For variety, the race might require the team members to run wheelbarrow fashion, backwards, sideways, crab walk, chicken walk, hopping, jumping, or three-legged instead of just simple running.

Many Variations Are Possible

Relay races set up and run in this way require the children to develop the ability to discriminate among a great many sounds and follow only the one which will guide them to the goal (selective attention). The novelty races very often require a good body image and can be helpful in improving a poor body image. For example, in the three-legged race, the child is asked to lift the left leg as he races along; children with poor body images will show some level of confusion in carrying out this instruction.

Relay races are very popular, especially with visually handicapped children, because it offers them the opportunity to run without danger to themselves; they know that the path has been cleared and they have a sound clue to follow. The only problem encountered is the failure of teammates to call the runner back to the home area; the runner, who is only guided by the calls that he does hear, will inevitably go to one of the other team's home areas.

HOKEY POKEY The "Hokey Pokey" is a dance which can be used to increase body awareness and to improve laterality concepts as well as the concept of in and out. After forming a circle, the children sing: "You put your right hand in / You put your right hand out / You put your right hand in / And you shake it all about / You do the hokey pokey / As you turn yourself about / That's what it's all about." The different motions need to be explained as is the idea of in and out. Manual assistance is given to those requiring it. The movements are performed as the song is sung. The words are changed each time so that the left hand becomes the focus, then each leg, the head, the backside, the frontside, and, on the last verse, the whole body. The only modification of the standard version of the dance is that the children do not move around the circle as they sing. In addition to laterality and the idea of in and out, the children learn about the various parts of the body.

Although visually handicapped children usually like this game, they never really get into it the way sighted children normally do. Their movements tend to be very inhibited; for example, when they are supposed to shake their hand all about, they barely move it.

HIT THE BUCKET This throwing game develops distance judgment and increases sound localization. It requires a bucket or similar type of container that makes a noise when tapped with a stick and a bean bag for each child. With the children arranged in a large circle with the bucket in the center, the teacher taps on the bucket to help the students locate it. Each one is then allowed to walk up to the bucket to get some idea of the distance and to learn about the size and height of the bucket. From their places in the circle, the children take turns tossing the bean bag underhand toward the bucket. If they cannot tell by the sound that the bag makes upon landing whether it is in the bucket, the teacher tells them. When all of the children have finished tossing, they walk forward to the bucket and, using the proper search techniques, try to locate a bean bag. The children can also be instructed in the proper way of bending over—by bending the knees rather than the waist. If they wish to keep score, one point can be awarded for each hit and the child with the highest number of points after ten rounds is the winner.

Although this game is useful in developing sound localization, distance judgment, and proper search techniques, it is not greatly enjoyed by blind children. If it is played only infrequently, they do enjoy it some. No particular problems should be encountered in the teaching and playing of this game.

OVER-UNDER RELAY This ball-handling game is useful in teaching the concepts of over and under, increasing the ability to handle a ball, and developing the concept of the straight line. Two leaders are chosen and they give sound clues to the members of their teams so that they form into two lines. The children put their hands out in front of them to see if the person is squarely in front of them. A ball is given to each of the teams—to the first person in each line. The ball is passed back through the line; the first person hands the ball to the second one by passing it over his head. The second person gives the ball to the third one by passing it under him, between his legs. The ball is passed back through the line, alternating over and under, until it reaches the last person, who runs to the front of the line and begins the process all over again. The game is completed when the individual who was originally at the head of the line returns to that position. The first team to finish the relay is the winner.

The "Over-Under Relay" not only develops the child's spatial awareness, but also the concepts of straight line, under, over, behind, in front, and between. When the children pay attention, this game can be played with few problems. Occasionally the children are confused about where to reach for the ball, but once they have it they know that they will need to pass it in the fashion opposite to the one by which they received it. The running aspect of the game presents few problems, although the first person in the line generally has to call out to the runner to guide him to the head of the line.

DONKEY DODGE BALL This is a throwing and dodging game aimed at improving skills in sound localization, throwing, and running. The players (limited to ten for safety) file one in front of the other and clasp the player in front by the waist, thus forming what is known in this game as the "old donkey." The player in the front is the "head" and carries the sound maker. The middle group represent the "body" and the last person is the "tail." The person designated as "It" is not part of the donkey; it is his job to chase after the moving donkey and hit any part of it with a seven- to ten-inch rubber playground ball. The ball should be thrown low in order to hit the players only below the waist. Hits above the waist are not counted. Upon a legal hit, the player who is "It" becomes the "tail" of the donkey, everyone else moves up, and the "head" becomes "It." If the person who is "It" is not totally blind, he should be blindfolded for this game. The game and the rotation of players continues until all of them have had a chance to be "It."

While this game is very complicated, it does involve many of the skills that are necessary for the development of orientation and mobility. These skills include sound localization, free movement in open space, and judgment of distance. For children who have the necessary skills—ability to move freely, follow a sound clue, throw a ball accurately—this is a very exciting and fun game. Six- and seven-year-old children are usually able to play this game, but younger children and slow children will usually become confused.

CALL BALL The game of "Call Ball" (or "Spud") involves throwing, running, and retrieving and requires the use of an audible ball. All of the children are given a number and asked to scatter out in the gymnasium. The person designated as "It" holds the audible ball, tosses it straight up in the air, and calls out a number. All of the children run from the ball; the person whose number was called must locate the ball, pick it up, and yell "spud." When they hear this, the other players must stop in place and not move. "It" is allowed to take three steps in any direction in an effort to locate someone who would then become "It." A person becomes "It" by being touched with the ball by the old "It" or by being hit with it when the old "It" rolls it toward him. The person is not allowed to dodge the ball. This process is continued until everybody has had a chance to be "It"—at which point the game is over. No one can be "It" twice unless they fail to hit the person aimed at with the ball. If a person is tagged twice, he is allowed to choose someone else to be "It"—someone who has not had a turn.

This game is a good one for developing distance judgment, sound localization, and many other pre-orientation and mobility skills. What makes this game more unique is that it is a faster moving one than the other games. There are many things going on at once in this game, so the child will find it necessary to keep in tune with everything that is going on around him. He must listen to find out if he is being called, while, at the same time, concentrating on getting as far away from the ball as possible, as quickly as possible. If his number is called, the player must quickly realize that he must run toward the ball instead of away from it. All of these things tend to make the person give their full concentration to the listening and playing of the game.

"Call Ball" is difficult to play effectively because of its complexity, especially when there is a large group of players; even if only four players do not know what they are doing, the game gets chaotic. If the ball is thrown up in the air and no one chases it, or if people fail to stop running when "Spud" is called, the fun is taken out of it. For this reason, this game should be saved for a sharp group of youngsters; when correctly played, it is great fun.

San Francisco State Awarded Grant to Establish "Living Skills Center For The Blind"

Blind young adults unprepared for independent living after their graduation from school will have help in developing the non-academic skills they need, as a result of a grant just awarded to San Francisco University.

The University's Department of Special Education has received $200,000 from the Office of Education of the U.S. Department of Health, Education and Welfare (HEW) to establish an ongoing living skills program for the blind.

The H.E.W. grant will fund the "Living Skills Center for the Blind," a residential program located in San Pablo, California. The new center is an outgrowth of the "Blind Adolescent Life Skills Center," an experimental service initiated in San Pablo three years ago. That program was funded by the California State Department of Education and administered by the Contra Costa County Superintendent of Schools Office, which will continue to participate actively in the operation of the new center.

Project director, Dr. Philip Hatlen, professor of special education at San Francisco State, states that the program will fill needs that are unmet in conventional education of the blind:

"We have a population of blind young adults, many of whom have exceptional academic skills, but little or no preparation in independent living skills. Many have never cooked a meal, vacuumed a rug, shopped for groceries, or balanced a checkbook, and are in many ways unprepared for independent life in the community."

The Living Skills Center for the Blind will be housed in 12 apartments. There, in a residential situation, 20 blind participants, many of whom have never lived away from home, will receive intensive training in six areas: orientation and mobility skills; communication skills; living skills (including such areas as personal grooming and cooking); social skills; recreational skills; and vocational readiness.

The Living Skills Center for the Blind is open to blind adults over 18. There is a minimum level of entry skill and preliminary screening is necessary. Anyone interested in applying for admission to the Living Skills Center can contact Center Director Richard E. Nunes at (415) 234-4984, or write Living Skills Center for the Blind, 2444 Road 20, Apt. C-105, San Pablo, CA, 94806.

Prerecorded Instructions for Teaching Food Preparation Skills

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Abstract: *This article fully describes the selection of ingredient measurement as the specific skill to be taught, preparation of a script, pretesting, review by experts, recording on a cassette tape, and testing the tape with five blind students in a school for the blind. The result of this pilot study was that it was found that some blind students can indeed learn through the use of prerecorded instructions. Specific tips and recommendations for the preparation of prerecorded instructional tapes are presented.*

▪ Two major problems have faced teachers throughout the ages: too many students and too little time. This problem is compounded for teachers of the blind who may spend ten times as long with their students as do teachers of the sighted. (*Programmed Learning Materials for the Blind*, 1967). In an attempt to alleviate this problem, this study, conducted at Oklahoma State University, developed taped instructions for use in the teaching of food preparation skills. It is believed that the study shows promise for adaptation in other areas of skill training.

Individualized instruction through the use of a cassette tape recorder was chosen as the method to be used in teaching a basic food preparation skill. This was done for several reasons: 1) Cassettes had been used successfully in teaching blind computer programmers (Schiff, 1968), as well as other subject areas, and it was believed that if they could be used successfully in teaching technical and academic materials, they might also be instrumental in skill training. 2) The tape recorder is simple to operate. 3) Tape recorders are inexpensive and are often already owned by blind persons, as well as many schools. 4) The tape recorder allows the full use of the hands in performing skills, rather than forcing the student to read brailled directions and perform skills simultaneously.

VALUE OF SELF-INSTRUCTION

Blind students learn in essentially the same manner as the sighted. Programmed or self-instruction has been determined to be valuable to the blind because it allows them to become actively involved in the learning process (Morin, 1970). They can start at the point where learning is most meaningful; they can evaluate their own progress in terms of their responses; and they can progress as fast or as slowly as they are individually able.

With directions available on a tape, they can repeat the lesson as many times as they feel necessary, with less individual assistance from the teacher, and without feeling the pressure to complete the lesson by the time that others do. It is also necessary for them to perform skills themselves rather than relying on others in the class to do the task for them.

Two considerations were made in the selection of the subject matter to be covered in the lesson. First, the student must be able to complete the lesson within the usual 50-minute class period. Second, the skill to be taught must be a basic skill required by all homemakers in the operation of a home.

Measurement of ingredients was chosen because of its value to the homemaker in producing a quality food product. Because different materials require different techniques, a liquid (water), a dry material (flour), and a solid material (shortening) were used. Inaccurate measurement is a common cause of sub-standard food products among 92-97 percent of all homemakers (Miller & Trimbo, 1972). Failures contribute nothing to the self-esteem of the blind homemaker who wants to do the things for her family that other homemakers do. Many blind persons are also on a limited budget and repeated cooking failures can pose a potential financial hazard to the entire family.

Because blind persons tend to tip measuring equipment toward the item to be measured, they should be encouraged to leave the equipment placed on a flat surface. It is easier for the blind to dip ingredients than it is for them to pour (Blay, 1970). Vinegar, vanilla, and other liquids might be kept in a wide-mouth container so that the spoon can be

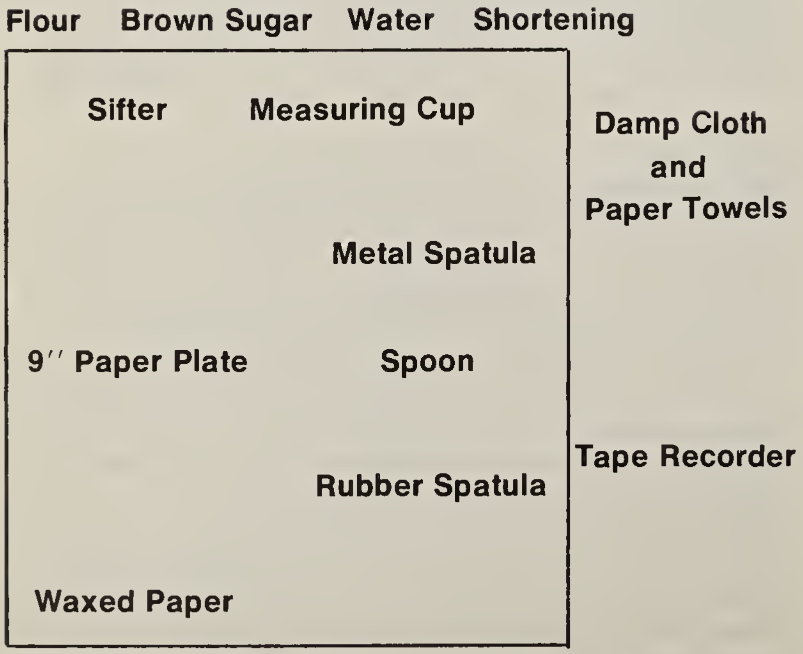

Figure 1. Arrangement of Materials, Equipment, and Tape Recorder

dipped into the ingredient rather than trying to pour the ingredient into the spoon. A *mediseptic measure* has been used successfully by some blind homemakers in measuring such ingredients. The blind student should also be encouraged to dip the spoon into brown sugar, baking powder, salt, and similar ingredients, rather than trying to pour them into the measure.

Difficulty in leveling will be encountered unless specific directions for placement of the spatula on both sides of the cup are given. The tip of the spatula will fall into the cup and remove part of the ingredients, or one side will be left high while the other is level. Precautions should be taken to prevent spills by placing a container under the measuring equipment, especially when measuring a liquid. This will prevent unnecessary clean-up, as well as loss of ingredients.

Unless blind students are told to dig "deeply" into ingredients, they have a tendency to only scrape the surface; or they may make a series of "jabs" into the ingredient and not get any at all into the measure or onto the spatula. Great difficulty is experienced in trying to "chase down" flour on a flat surface with a spoon. It is much easier to sift directly into the measure when possible.

Packing brown sugar or shortening into a cup may also result in a series of "jabs" with the end of the spatula or spoon unless careful directions are given. The directions must include which side of the spoon or spatula to use. Difficulty is experienced in trying to clean the shortening from the spatula or the measuring cup. It is also to be expected that the work area will not remain as clean for the blind student as it will for a sighted student who is able to see what she is doing.

Returning tools and ingredients to their former positions after they have been used helps to alleviate the problem of a cluttered work area. Using as few tools as possible and using the same tool for several jobs also helps. These ideas and suggestions were incorporated into the script which became the tape.

After deciding what skills would be taught, the writing of the script for the tape was begun. An effort was made to anticipate classroom problems and precautions were taken to provide for various classroom situations. For example, the water was to be poured back into the pitcher rather than into the sink in the event that the kitchen used in testing did not have a sink near the testing area. A spoon was used in getting the brown sugar to avoid confusion if the sugar was kept in the box in which it was purchased rather than a wide-mouth container. Praise and encouragement were given as reinforcement when possible. If it was felt that the student might be having difficulty, such comments were withheld.

In writing the script, contractions were used when they would have been used in normal conversation. Abbreviations were not used because it was found that the reader had a tendency to hesitate or stumble over them when making the tape.

TAPING TIPS Some methods were developed during the writing of the script which were not found in the literature. These are:

1) Explain exactly what is to be done. It helps to perform the steps to be included in the lesson and write the directions as the steps are accomplished.

2) Break the steps logically. Do not attempt to make all of the steps the same length.

3) A ten-second interval between steps in taping will allow ample time for the student to start and stop the tape.

Continuous taping without stops helps to eliminate "garbled words."

4) Capitalize or underline the words in the script which are to receive special emphasis.

5) Anticipate possible occurrences before the student experiences them. For example, if one feels reasonably sure that the student may spill some of the ingredients in measuring, such expressions as "Did you spill a little?" may alleviate the stress that the student feels when discovering that he *has* spilled some.

6) Use positions on the clock to indicate positioning of equipment.

7) Don't leave students holding equipment when the directions for the next step are given.

8) Eliminate superfluous words, and words which might not be understood in an effort to make it possible for all students to understand the directions being given.

TESTING OF THE SCRIPT When the original script was completed, it was tested with a 14-year-old sighted boy. It was found that the student had not always been given instructions as to what to do with equipment when he had finished using it. Consequently, he was left holding it in his hand when the next step was given. Revisions were made to include an additional step, "Put the tools back in their original positions."

It was also discovered that a pie pan, used in the original directions, interfered with the use of the left hand in steadying the cup. A paper plate was substituted. The plate presented no barriers to the use of the hands and it was also easier to use in returning ingredients to the canisters.

When these revisions had been made, the script was presented to a panel of judges composed of three home economics instructors (two in home economics education and one in home management) and a communications person in home economics. Further revisions were suggested, primarily in the form of rewording for greater clarification. These suggestions were incorporated into the final script, which consisted of 26 separate and distinct steps.

Once the script was completed, it was read several times in order that it would be very familiar to the author. Experimentation with voice inflections and the length of pauses was also conducted. A time was selected for taping when there would be relatively little noise and no interruptions. Since fluorescent lights often cause a "hum" on tape, a room was selected which contained no such lights.

Recording the Lesson on Tape

The microphone was placed in the microphone stand on a chair beside the recorder. The recorder was placed on an upholstered chair to prevent vibrations which could be picked up on the microphone. The author sat facing draperies with her mouth approximately ten inches from the microphone. The script was placed on the right side of the microphone. As each page was read, it was dropped to the floor. Although the floor was carpeted in this instance, the microphone would probably not pick up the sound of the page falling on a bare floor. Caution was taken to prevent moving the head to see where pages fell so that the sound was at the same volume constantly.

The volume was set at five. Playback was at about two, but this allowed for the volume to be adjusted up or down to fit the needs of the individual student. The tape was not stopped between steps, but a ten-second interval between steps allowed time for the student to start and stop the tape. Since the first few inches of the tape is clear, no sound can be recorded on that portion of the tape; therefore, a period of 15 to 20 seconds was allowed before beginning to speak.

Efforts were made to read the script as if actually speaking to the student. In order to do this, it was necessary that the reader be relaxed and comfortable. Practice sessions made it easier for the author to read comfortably.

When the final tape had been made, it was taken to the Oklahoma School for the Blind for testing. Permission for testing was granted by the superintendent of the school and by the director of the Department of Institutions, Social and Rehabilitative Services, State of Oklahoma.

In advance of the visit, five students who met the criteria of total blindness with no other physical or mental handicaps, familiarity with measuring equipment, and no proficiency in measuring ingredients used in food preparation were selected by the home economics teacher at the school to test the tape.

The five students tested had been blind since birth. They were from 17 to 19 years of age and had been at the Oklahoma School for the Blind for 12 to 13 years. Four of the students had had very little homemaking experience in the home; one of the students had had "some." All were familiar with the operation of a tape recorder, but none had ever tried to follow taped step-by-step directions. All of the students tested were female.

As each student arrived for testing, she was directed to the test kitchen where the equipment and tape recorder had been laid out in a pre-arranged manner (Figure 1). The tape recorder buttons had been covered with plastic wrap to prevent ingredients from getting into the mechanism.

The Results of the Test

Because the sample was small, the case study method was selected as a means of presenting the findings. The cases presented in this study are not necessarily a representative sample of the ability of blind students to use taped instructions in the performance of homemaking skills. Interviews with both the student and her teacher provided the initial information required. Information regarding the performance of the student in completing each step in the lesson was recorded as the student completed each step.

The five blind students who tested the tape completed the lesson in less than 50 minutes and with little teacher assistance. The mean time for completion was 40.2 minutes; 22.8 of the 26 steps in the lesson were completed without teacher assistance or replay of the tape. Therefore, the researcher concluded that some blind students can follow taped instructions in the performance of homemaking skills with little difficulty.

VALUE OF PRE-TESTING Pre-testing the tapes was probably a major factor in their success in the classroom. However, it may not be possible for teachers to test tapes as extensively as was done in this study. Review of the literature to determine methods which have proven successful in teaching a particular skill to a blind person, the performance of each step personally as the script was written, pre-testing with one student before taping, and the opinions of other teachers of home economics concerning the wording and content of the script can be of great benefit in making the tape. Of primary importance in any learning is that the student *understands* what is being taught. Testing the script with one blind student may well provide the choice of words which will clarify the meaning for other students. If this can be accomplished through the pre-testing of the script, it may not be necessary to have the script evaluated by other home economists.

Some adjustment in the script for a tape may need to be made to meet individual student needs. However, such changes should be few and might be in the form of oral instruction rather than changes in the script. An example might be the use of the left hand rather than the right for left-handed persons.

It would seem that more specific instructions concerning the positioning of the spatulas in working with the shortening might strengthen this particular lesson, since most of the problems encountered by the student seemed to arise in this area. Problems might be overcome by participation in a demonstration before attempting the taped lesson, the purpose being to review the part of the equipment to be used and to give the student an opportunity to observe methods tactually.

Taped instructions are not intended to replace the teacher, but merely to give her more time to work with individual students when a problem is detected. Caution should be exercised to prevent either the student or the teacher from becoming too dependent upon the use of tapes.

Teachers may need to assume responsibility for identification of problems since students may not be aware that a problem exists. Taped instructions should promote independence in students and allow them to work as quickly as they are individually capable. However, the teacher must be sure that the student does not continually practice wrong methods unknowingly.

Experience in the home seemed to affect the ability of the student to perform the tasks required in the lesson. However, it was not felt that such experience was necessary to the completion of the lesson. It would seem that opportunities to learn in the home might make it possible for the student to perform tasks with less assistance.

In addition to the evaluation of individual performance by the researcher, each student was asked to verbally express her attitude toward the use of taped instructions. In every instance, responses were extremely favorable.

PILOT STUDY RECOMMENDATIONS As a result of the pilot study, it seems evident that some blind students can follow taped instructions with little difficulty. Therefore, the following recommendations are made:

1) Further testing of tapes to determine their validity as a teaching tool for blind students, blind adults, and persons with other physical or learning handicaps.

2) The making of a series of tapes, each building upon the other, to determine the effect on learning rate when another experience is anticipated.

3) Testing to determine whether the ability to make decisions independently is enhanced through the use of tapes.

4) Determination of the value of tapes in testing (with students who have reading problems) or in make-up lessons.

Although the material in this work is copyrighted, educators are urged to use it in any way which might be beneficial to them in teaching. The copyright is intended to prevent commercial production of the material for profit. Copies of the tape itself can be obtained by contacting the Department of Home Economics Education, Oklahoma State University, Stillwater, Oklahoma 74074.

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Pilot Braille Information Service Started

A pilot monthly braille information alerting service for blind computer programmers, a joint operation of INSPEC (the Institution of Electrical Engineers), London, England and the Warwick Research Unit for the Blind at Warwick (England) University, is now functioning.

The pilot project's purpose is to help blind computer professionals to keep up to date in their fields of expertise by providing them with the means of identifying items in the current scientific literature that are relevant to their interests and work.

Each month, computer readable magnetic tapes containing abstracts of recently published articles from computer science journals culled from INSPEC's *Computer & Control Abstracts* are converted into a good approximation of Grade II braille on the Warwick Research Unit's computer with a special braille embosser.

For more information about the service, which at present has a limited number of users and is free of charge, write the Warwick Research Unit for the Blind, University of Warwick, Coventry, CV4, 7AL, England.

Should Museums Serve The Visually Handicapped?

DOVE TOLL

Ms. Toll was exhibits research associate, Office of Exhibits, Museum of Natural History, The Smithsonian Institution, Washington, D.C., at the time this article was written.

Abstract: *The National Museum of Natural History of the Smithsonian Institution undertook a research project to determine what could be done to enable visually handicapped persons to benefit from the museum's resources. Programs currently of interest to the blind were advertised, with maps of touchable objects throughout the museum made available. In addition, books about the Smithsonian have been brailled, cassette tours of individual halls prepared, exhibit designers encouraged to include more touchable objects in their displays, and docents given special training in how to relate to and guide blind persons. Further sources of information appear at the end of this article.*

■ Museums are basically visually oriented institutions. Therefore the needs of the visually handicapped are not often taken seriously by museums. A four-month research project took place at the National Museum of Natural History of the Smithsonian Institution late in 1974 in order to determine what, if anything, should be done by the museum for the visually handicapped. The Women's Committee of the Smithsonian Association, a volunteer and fund-raising group, provided the financial support for one full time research associate to conduct this project. She worked in coordination with the staff members of the exhibits department and the education department.

To begin with, the experience of other museums in meeting the needs of the blind was explored. Several people with long experience at the Smithsonian suggested the names of about 15 museums that are known to have excellent education departments. We wrote to each of these museums, asking them to share their experience with us. Still other museums were interviewed by telephone. The Mary Duke Biddle Gallery of the North Carolina Museum of Art in Raleigh was visited. It was the first sculpture gallery to be developed for the blind and sighted and provided the inspiration for a great many other such galleries all over the world.

The literature on museums and the blind and that on special education of the visually handicapped was explored and found relevant to our interests. The materials that were most useful are listed in the bibliography. Following the bibliography is an annotated list of museums that have had galleries and/or exhibitions for the blind, and are therefore potential sources of information and advice.

The resources of the Washington, D.C. area, both governmental and private, provided us with much practical help: the Division for the Blind and Physically Handicapped of the Library of Congress, the Department of Vocational Rehabilitation, the American Foundation for the Blind, and some local volunteer groups all proved of aid to our program.

DEFINING THE NEED

As a result of this initial research, the general question of how to make the museum more serviceable to the blind became focused on exhibits. Should the museum develop an exhibit for the visually handicapped? If so, what kind of exhibit? If not, what were feasible alternative services for the blind?

Information obtained from other museums suggested that the number of blind people who attend museums is relatively small. Ms. Maya Reid, director of the Mary Duke Biddle Gallery referred to above, reported an average of 200 visually handicapped and 10,000 sighted visitors per month. The Atheneum in Hartford, Connecticut, has an impressive tactile gallery developed to meet the needs of the visually handicapped; 10 percent of the visitors to this gallery are visually handicapped. Other museums throughout the U.S. report similar attendance rates.

At first, these low attendance rates of the blind at galleries specifically designed for their use may appear surprising. However, when one examines the statistics on blindness, the reasons for this become apparent. For most people in the United States, visual impairment becomes a problem in old age. Sixty percent of the adult blind are over 65 and often not mobile for reasons other than blindness. Among blind children, a larger number than in previous generations have multiple handicaps as a result of a rubella epidemic in 1964–1965.

Thus, although large numbers of the visually handicapped

> **“Several visually handicapped people have indicated that they would find touchable models of the various museum buildings within the Smithsonian Institution a welcome addition to the orientation area.”**

do not visit museums, it nevertheless became apparent, as a result of discussions with blind people and those who work with them, that there was a small group within this general population who expressed an acute need for museum services: the young, intelligent, mobile blind. This small group eagerly desired any educational or cultural experience that would compensate for the learning opportunities denied them by their lack of vision. What was found, then, was the intense need of the few rather than the need of a large number of people.

There were now several questions to consider. Did we want to serve the needs of these people? If we did, what were the problems involved in doing so? At this point we discovered a serious dilemma.

In conversation with several visually handicapped people, it was discovered that many of them did not want exhibits to be developed for their exclusive use. Among the problems faced by the blind, that of being singled out for special treatment is one of the most difficult to cope with. They feel that it tends to segregate them, limiting them to those particular places in society which are specifically devoted to their nurture and employment. They resent this deeply and some organizations of the blind devote a great deal of energy to resisting the development of any type of service that perpetuates this tendency. Therefore many blind persons are skeptical of and tend to oppose proposed “special services for the blind.” What they do want from the museum world, however, is more touch and auditory exhibits for the general public that they can visit as part of that general public.

This presents museum planners with a problem. It is often the case that a special exhibit for the blind would be economically feasible, whereas a touch exhibit for the general public is not. Because their numbers are small and they handle materials carefully, there are many things the blind can be allowed to touch that cannot be exposed to the general public. The cost of making a touch exhibit sturdy enough for the general public is exorbitant and many museums do not choose to spend their exhibit budgets in this way. Museum educators start out with a willingness to meet the unique needs of the blind, but when they are asked to give this unique treatment to the general public, which does not need it, they often get discouraged and give up the whole project.

A Suggested Program

An alternative reaction was to accept the restraints of the situation and try to work within them. Since there was a potentially small number of visually handicapped visitors, it did not seem appropriate to use a large sum of public funds to serve them. The question we then asked was: given our current resources, how can we broaden our services and more effectively meet the needs of those among the visually handicapped who want to visit museums?

Some answers to this question soon suggested themselves. For example, it was observed that there were about 30 objects scattered throughout the Natural History Museum that the general public was allowed to touch. However, visitors to the museum had no idea where those objects were until they happened upon them. We were told by both blind people and those who work with them that many visually handicapped museum goers take a sighted friend with them on museum visits. We therefore decided to print a map of the museum, showing the location of touchable objects and giving some information about them. This map will soon be mailed to 200 organizations that serve the blind throughout the United States, along with a letter describing our other resources that might be of interest to them (see below). These maps will be available at all information desks of the museum as well.

While planning the map of the musuem, the development of a raised line map was considered. This is a map that can be read by blind persons with their fingertips in a manner similar to braille. However, through research and conversations with knowledgeable people, it was learned that blind people can use such maps only if they have received special training to do so, and very few have had this training. Since the cost of making the map would be significant, it was decided to make the printed map available first and to see if there was an expressed need for a raised line map before investing in it.

CASSETTE TOURS Cassette tours of three individual halls have been developed, designed specifically for the blind. The descriptions of exhibits given on these cassettes are fuller than those on the existing museum sound system. Directions for getting around the exhibit hall are provided on the assumption that the visitor is blind and using a cane. The Division for the Blind and Physically Handicapped of the Library of Congress has helped immensely in making these cassettes available. The museum provided only the scripts. The Library of Congress provided the cassettes, all the technical expertise necessary for taping and maintaining the tapes, and the critical advice and reactions of blind people who tested them. A cassette is presently available for use and will probably be revised several times in response to the reactions of the users. A simple questionnaire, currently being prepared, will be filled out by the person to whom the cassettes are returned after use.

The museum docents were next considered. Since docents give tours, they are apt to have direct contact with blind visitors. Many of them expressed anxiety when faced with having to deal with blind visitors. Since relating to the blind is an uncommon situation for most people, they did not know how to react helpfully and therefore became embarrassed and withdrew. With the help of a local organization, Volunteers for the Visually Handicapped, a training session was held on how to relate to and guide blind people. The response was enthusiastic and it will probably be repeated.

Since this project was being constructed within the exhibits department, an informal dialogue developed between the exhibits’ designers and the research associate working on the visually handicapped project. The dialogue consisted of a discussion of the value of including more touchable objects in the design of new halls and the problems involved in doing so. A paper was written for the designers about some of the basic principles regarding the needs of the visually handicapped in exhibits. However, exhibit designers have many pressures and constraints upon them in designing for the general public. Although they listened sympathetically to our desire for more touchable objects, when it came to actually designing the hall, touchable objects were clearly given low priority. We have not given up all hope yet, but this is one of the less successful endeavors of the project.

New information about the Smithsonian has been made available to the blind. The guidebook *Seeing the Smithsonian* and a history of the Smithsonian Institution were both transcribed into braille and will be available for use in the library of the Natural History Museum, among other places. The transcription was done by a local volunteer group.

OTHER PLANNED PROJECTS Two projects were considered that have not yet been put into effect because they did not fit into the museum's plans at this time. However, the ideas are basically sound and may be of interest to other museums, so a description of them is included below.

The Natural History Museum is considering developing an "orientation area" within the next few years. This area would be situated near the entrances to the museum and would provide visitors with an introduction to what the museum has to offer and where various facilities are. The needs of the handicapped are being taken into consideration in the planning. Visual material will supplement all sound tracks so that the deaf will not miss any information. Visitors in wheelchairs will be given information relevant to their needs. A special tape will be provided to introduce the blind to the tactile and auditory exhibits in the museum. If time and resources are available, this tape will be developed before the orientation area opens.

Several visually handicapped people have indicated that they would find touchable models of the various museum buildings within the Smithsonian Institution a welcome addition to the orientation area. The only way that they can understand architectural features is through models since buildings are too large to comprehend by touch directly. If it is possible, these models will be included.

Mobile Collections

Many museums have been bringing specimens to the handicapped (particularly children, but also to adults) rather than expecting them to come to the museum to see them. This has been done by both art and science museums for many years. It can be done simply, by having docents bring specimens or art objects to the people concerned and then return the material to the museum. A more ambitious program is carried out by the San Diego Museum of Natural History. They sponsor a mobile tactile museum with a large variety of specimens that travels to handicapped children. As our other projects are completed and resources become available, we hope to be able to develop a similar service.

We found that the number of blind people in the museum-going public is quite small. Those among the blind who do want museum services express a great interest in more tactile exhibits that are open to the sighted as well as the blind.

In developing our program for the visually handicapped at the Smithsonian's Museum of Natural History, we began by trying to work within our current resources. Those objects and programs that were currently available and of interest to the blind were advertised. Other projects were done with resources supplied by local government and volunteer groups. For example, objects that were already touchable by the general public were located on a map of the museum for the use of a blind person coming with a sighted friend, cassette tours of individual halls have been prepared for the blind, books about the Smithsonian were transcribed into braille, exhibit designers were encouraged to include more touchable items in each new exhibit, and docents were given special training in how to relate to and guide blind visitors. Two projects that may be developed in the future are an orientation area to provide an introduction to the museum for handicapped visitors and some sort of museum "outreach" program to bring exhibits to children who find it difficult to come to the museum themselves.

These are the things that have been done and planned for with our present resources. Perhaps the most important accomplishment of this project is that many of us working in different areas of the museum have become sensitized to the needs of the visually handicapped visitor and more informed regarding what can realistically be done to meet those needs. This benefits not only the visually handicapped but also those of us whose world has been expanded by learning more about a group of people who live among us.

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Museum Exhibits and Galleries for the Sighted and the Blind

Perception: An Exhibition of Sculpture for the Sighted and the Blind
California Arts Commission
1108 14th Street, No. 205
Sacramento, California 95814
A touring sculpture gallery founded in 1970.

Tactile Gallery
Wadsworth Atheneum
Hartford, Connecticut
Holds periodic exhibits using senses other than vision.

Newark Museum
43–49 Washington Street
Newark, New Jersey 07101
Holds periodic tactile exhibits.

Nevil Gallery
University Museum of the University of Pennsylvania
Philadelphia, Pennsylvania
Has anthropologically oriented touch exhibitions.

Mary Duke Biddle Gallery
North Carolina Museum of Art
Raleigh, North Carolina
Art gallery for blind persons.

Touch and Learn Museum
Overbrook School for the Blind
Philadelphia, Pennsylvania

Tactile Mobile Museum
San Diego Natural History Museum
Box 1390
San Diego, California 92112
"Living and non-living specimens are taken to handicapped children so they may share experiences and receive individual instruction in the world of nature."

Salt Lake City Art Center
Salt Lake City, Utah
Has special exhibitions for the blind.

Age-Related Sensory Losses Subject of New Videocassette Program

An overview of sensory losses, in particular vision and hearing, that occur with aging and a discussion of some of the specific physiological changes and their effects are treated in "Age-Related Sensory Losses—An Empathetic Approach," a 15-minute color videocassette program developed by the Institute of Gerontology, the University of Michigan/Wayne State University.

The purpose of the two-segment program is to sensitize viewers to age-related deficits in vision and hearing and to answer some of the common questions about them. In the first segment, Dr. Leon Pastalan, research director of the Institute of Gerontology, discusses sensory loss in general and provides answers to many of the questions people have about it.

In the second segment, which is a three-generation family dinner scene, a specially prepared lens covering and audio control is used to simulate the vision and hearing problems of a person in her late seventies. This can provide the viewer with an awareness of how vision and hearing loss affect the older person's daily physical and social functioning.

"Age-Related Sensory Losses—An Empathetic Approach" can be purchased ($50), rented ($15), or duplicated one time ($50 for purchase plus $25 license to duplicate). For more information or to order, contact The University of Michigan TV Center, 400 Fourth Street, Ann Arbor, Michigan 48104.

Increased Field Accessibility Through Prismatically Displaced Images

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Abstract: *The Low Vision Clinic at the Veteran Administration's Eastern Blind Rehabilitation Center is using Fresnel press-on prism lenses to aid veterans with extremely restricted visual fields. These prisms optically move objects from areas of visual field loss to areas of useful vision, thereby making objects with a potential hazard more visually accessible. Some of the dynamics involved in the placement of the prisms, training, and adjustment of the client to these lenses are described.*

■ A brief survey of the literature will show that prism lenses have been used quite frequently in perceptual and motor skills research. They also have been used, with varying degrees of success, in the optic and orthoptic treatment of tropia, hemianopsia, strabismus, and other visual problems involving a decreased field of vision or improper fusion lock (Weiss, 1972; Thorson, 1972; Jampolsky, 1971). At the Low Vision Clinic of the Eastern Blind Rehabilitation Center, wafer-thin Fresnel press-on prism lenses are being prescribed to accommodate such visual field restrictions, and also for more diverse types of field loss than previously reported in the literature. Also unique to the clinic's program is the involvement of blind rehabilitation staff during the client's initial adjustment to the lens. This aspect of the low vision program was initiated by and continues under the guidance of Robert R. Perlin, O.D., consulting optometrist to the clinic.

SUITABLE PRISM PATIENTS

A major factor in the placement of a prism lens is the client's visual acuity. It must be noted that the lens will not aid visual acuity and is usually placed over a prescribed refractive lens. However, visual acuity is very important in the functional use of the prism. For example, a person with very low acuity will have to scan into the lens more frequently as he walks than will a person with high acuity, assuming that both walk at the same pace under the same conditions. This is due simply to the fact that the individual with high acuity is able to obtain visual information at greater distances than his companion with low acuity.

Accordingly, the person's visual acuity may cause the instructor to suggest that he alter his pace, scan at a different rate, or possibly be seen again by the Low Vision Clinic for re-evaluation of prescription and placement. Also of importance are factors such as age, sex, educational level, visual pathology, and psychological data. Examination of these and other variables for possible relationship with functional improvement is an ongoing part of the research.

The acuities of the clients for whom prisms have been prescribed to date have ranged from 2/700 to 20/20. Field restrictions have varied from a remaining central field of 1–12 degrees. Remaining fields have not always been in the macula area, but they have all been extremely restricted. Most of the clients have had only monocular vision. Pathologies to date have included glaucoma (4), retinitis pigmentosa (9), trauma (4), diabetic retinopathy (1), Fuchs syndrome (1), multiple sclerosis (1), optic neuritis (1), Bechet's disease (1), tumor (1), and central retinal artery occlusion (1).

PRISM LENSES

Prior to discussing techniques of placement and training procedures, a short summary of the characteristics of a prism lens is in order. The optical nature of a prism is such that it creates a displaced image separated from the real image by a distance dependent upon the combination of the diopter power of the prism and the distance of the viewed object from the viewer. For example, an object viewed at one meter through a one diopter prism will be displaced one centimeter away from the base of the prism. With an object viewed at two meters through a one diopter prism, the angle of deflection of light will remain the same. However, a greater distance from the viewer will cause the displaced image to appear proportionately further displaced from the real image. If the one diopter prism is replaced by a two diopter prism, a greater angle of deflection

"Training is perhaps the major factor in successful prism use and is possibly the key to why we have found the lens to be primarily useful in a mobility situation."

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is introduced at one meter and, as before, distances greater than one meter serve to displace the image proportionately further than two centimeters. Clients have been fitted most successfully with 20 diopter prisms, although other powers have been tried and will continue to be evaluated.

Prism placement was first made on the spectacle lens at the client's limbus margin. However, the clients, particularly those with multiple prism placements, indicated that they experienced the feeling of being closed in or extremely constricted visually. The belief that the prism should be primarily used as a reference, as a driver would use a rear view mirror, caused us to discontinue the limbus margin placement procedure and to develop a technique which would give the client a range within which he could move his eye on a visual axis before entering the prism portion of the lens. The following is the present procedure when fitting prism lenses for the temporal, nasal, and inferior fields with excursion allowances of 20, 20, and 25 degrees respectively.

Measuring the Client's Field Restrictions

The client's field restrictions are measured by means of a perimeter and a tangent screen examination. Following this, the client is seated a second time before the tangent screen at one meter with his head stabilized by a chin rest and, if need be, an occluder over the eye not being worked with. Measurement is made to insure that his eyes are on a plane with the center point of the tangent screen. One-inch squares of tape are used as markers and placed with their inner margin at the 20 degree mark of the screen in both the nasal and temporal radii. A tape of the same dimension is placed with its inner margin on the 25-degree mark of the screen at the inferior radius. Wearing predetermined corrective lenses, if available (otherwise plano lenses in the frame style he will have in the future), the client is instructed to look at one of the markers, and to use it as a fixation point. A piece of adhesive is then moved over the front of the corrective lens until the client reports he can only see the inner edge of the marker as a kind of haze or blur. This point on the lens is recorded and becomes the leading edge of the prism. The same technique is used for placement in the other field quadrants. All three field measurements can be made and recorded on this occasion; however, only one prism direction is attempted at a time and in some cases only one prism will ever be indicated for the client.

USES OF VARIOUS POSITIONS A client's expressed needs can be a major factor in the determination of the first placement. If he is concerned about bumping into people, is using monocular vision, or requests an extension of his lateral field, the prism is first placed in the lateral portion of his lens with the base out. If his most pressing concern is lower obstacles and drop-offs, the first placement should be made in the lower portion of his corrective lens with the base down to bring these objects up into his view. We have most often found that a client should be given at least two days to work with the blind rehabilitation staff, receive instruction, and learn to adjust to the prism optics before a second or even third prism placement is added to or replaces the first.

Training is perhaps the major factor in successful prism use and is possibly the key to why we have found the lens to be primarily useful in a mobility situation. Normal scanning in and out of the lens is not only encouraged but taught and reinforced in structured sessions. We have found visual scanning abilities while walking to be extremely important, unlike the following position taken by Weiss (1972): "The initial problem is to teach the patient not to sweep his eyes from one edge of the lens to the other when walking: only one section of the lens must be used when he is moving. In the event that he wants to change his fixation, he must stop walking, make the change, and then continue. On the other hand, movement of the eyes when the patient is stationary is much less of a problem and, indeed, demonstrates the value of the lens system."

Most of the 24 clients we have fitted to date have reported that the prisms are far more useful as an obstacle detection and advance warning aid in mobility situations than in sedentary tasks. In fact, of those who continue to wear prisms, sitting in conference with others while wearing the lens seems to be the most annoying aspect of the prism. The most likely reason for this difference in findings is perhaps due to the fact that all of our clients received instruction on how to use the long cane while traveling and did so when warranted. The prisms then could be used by them in conjunction with the long cane, thus allowing them to be more confident and able travelers. Use of the long cane also serves to free their vision from the task of looking for drop-offs and low objects and allows an immediate tactual source of feedback for users of lower field prisms.

TEACHING ABOUT PRISMS Early in the practice of using prisms to displace visual images, it became evident that both adjustment and efficient use of this lens was greatly enhanced by the client's knowledge of its optical function. Also conducive to this end was instruction in appropriate techniques of visual scanning and exploration. A large part of this instruction, along with part of the screening and evaluation process, became the responsibility of orientation and mobility instructors. Since these blind rehabilitation professionals are primarily concerned with travel techniques and orientation skills, and most of the prism candidates were already being seen on a regular basis for orientation and mobility instruction, they could further instruct the client in proper use of the lens. They could also report progress or difficulties to the optometrist and act as information resources concerning the needs and abilities of potential prism users. They are also in a position to view and work with both static and dynamic postural attitudes related to the use of the prism, note changes in visual scanning and obstacle detection abilities, and appraise overall adjustment and reaction to the functional application of the lens.

The following basic procedure, which is used to introduce the lens, should not be considered a visual testing procedure. It is conducted to allow the client to manipulate his field of vision in and out of the lens and to obtain clear and immediate feedback as he begins to use the lens. It is therefore important for the instructor to have a good working knowledge of the client's vision and lens prescription. Self-produced hand movements in front of the prism are encouraged at the onset so that the client begins to perceive the role of the prism through direct and immediate feedback. In a structured teaching setting, the client is seated with head and eyes held straight ahead approximately five feet from a blackboard. The instructor draws a straight line on the board in the "blind area" created by the optical effect of the innermost or "leading" edge of the prism. This must be done using information the client provides as to where this area is. The client then holds his head so that the inner prism edge is parallel with the line on the board and can be moved across it by head movements. He does this at various distances from the board and thereby can appreciate the fact that there is a blind area which increases in width at greater distances. This area is dependent upon prism diopter power and distance of the material viewed in the same manner as explained for object displacement. At this time the future importance of scanning should be stressed, since scanning will negate any problems created by this phenomenon.

The next task involves the client looking straight with the leading prism edge on the line on the blackboard, so that the line is not seen by him. Two geometric shapes or letters are drawn equidistant from the line; one lying in the prism area and the other in the non-prism area of the lens. As the client holds his head straight, he scans with his eye in and out of the prism from one shape to the other. They will not appear equidistant from the line to him. As the board is moved closer or further from the client, he should be able to gain a greater idea of the displacement caused by the lens. Approaching and looking at the board without the prism will reinforce the idea that the shapes are indeed equidistant from the line.

Travel Lessons Using the Prism

After doing the above a number of times and incorporating combinations of both head and eye scanning, the client should begin walking through structured situations in which the prisms can aid him. One method which has proven helpful is the use of upright poles of two colors to pre-set a route in a large area. The client is instructed to go first to a pole of one color then to a pole of the second color and to alternate colors until finished. Poles with good contrast should be used and placed so that the majority, but not all of them, will be found in the prism area of the lens, thus guaranteeing maximum opportunity to use the lens.

A long indoor/outdoor route was charted on the hospital grounds to be used in the next step of prism adaptation. This route is composed of numerous elements which the individual has to negotiate and which would serve as an empirical way of viewing changes in his use of the prism and his overall abilities before and after placement of the prism. Sections of this route are also used in a basic evaluation to determine visual field needs and overall travel abilities prior to the decision about whether or not a particular client is a potential prism user. The architecture and construction of the hospital buildings and grounds permit the use of several variations of route while not sacrificing contact with obstacles and situations found in the basic route. Exposure during the evaluation period, prior to wearing the lens, can be nullified by using alternate corridors or sidewalks once the prisms are placed. It is important to observe, both in the indoor and outdoor situations, the individual's ability to negotiate relative movement situations involving other pedestrians. More advanced mobility, such as populated sidewalks, stores, public transportation, and so forth, are introduced as the client learns to use the long cane or other mobility device in the regular rehabilitation program. Throughout, he is offered real-life situations with the opportunity to have immediate comment and discussion with the instructor.

SOME FINAL COMMENTS Most importantly, staff awareness of the combined effects of the physical and psychological attributes of the client, along with his knowledge of the prisms and their use, are necessary if prisms are to become a viable low vision aid for him. It is hoped that standards for the placement of prism lenses can be developed, along with techniques for training. An attempt is being made to analyze factors which may help in the evaluation process and in predetermining success.

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The Index for Volume 69 of the New Outlook (1975) Will Be Included With the February 1976 Issue

From the Field

In this field, as in most others, many valuable and interesting ideas never make it into print for a variety of reasons: the information does not fit nicely into an article, a short feature, or a news item; the author (of the idea) does not have the time to sit down and write an article about it; the idea, practice, or suggestion is still tentative in nature.

For a long time, the editors of the *New Outlook* have been interested in finding ways to get into print some of the kind of information that "falls between the cracks." For example, suggestions from blind people about specific needs they have that are not being met or ways they have found to do things; new methods of doing things that individual practitioners have found successful; queries from blind people, practitioners, and researchers about whether a method or device for doing something exists.

In other words, a place in the *New Outlook* where readers can exchange information with each other. Following are two letters dealing with this subject, one written to the editors, the other originally sent to the aids and appliances division of the American Foundation for the Blind.

We are very interested in starting a regular column that will deal with this kind of material and would appreciate receiving readers' reactions to the idea and suggestions.

To the Editors:

As a faithful reader of the *New Outlook for the Blind* and a worker with the blind for more years than I have been reading *Outlook*, I view this magazine as being a very important informational and educational tool. Most teachers for the blind and many personnel in agencies for the blind regularly read the *Outlook* and gain from its contents. In discussing this valuable role of *Outlook* with some colleagues, several suggestions were raised regarding its function and influence.

One problem facing many of us who work with the visually handicapped is lack of communication about new ideas in improving service delivery to the visually impaired. It occurred to us that *Outlook* might be of assistance in resolving this problem. A new column might be initiated which could possibly be entitled "idea exchange." For example, I teach reading techniques to low vision individuals. For some persons, we have found that a yellow filter when used in reading, greatly enhances contrast and thus improves reading ability. This simple idea needs to be shared with others who work with the visually impaired. I see the *New Outlook for the Blind* as the medium for this exchange of ideas. I do not mean to limit this exchange of ideas to only those ideas that are known. The column should also serve as a chance to ask questions or promote research. For example, it would be nice if there was an eraser made that could erase felt tip pen markings. I don't know whether this problem is being researched or whether such an eraser exists but maybe someone else might know of its existence or be willing to produce such an eraser.

The idea of a column in *Outlook* exchanging ideas developed over lunch one day this week. This is one of those ideas that is meant to be shared and I hope it might be given some consideration. Thank you for your attention.

Constance H. Loarie, Coordinator
Low Vision Services–Pacific Medical Center
San Francisco Lighthouse for the Blind

To the Editors:

It might be helpful if there were a booklet on the ways and means blind people have discovered for doing things in braille, large type, or on cassette.

Though I have and use the Raised Line Drawing Kit, I also discovered that one can make tactile lines with a "gritty" crayon on smooth paper. Further, one can use the "dime store" type compass with the crayon, and of course the braille protractor, rulers, etc. Since the crayon does make a sort of wide line, one must work big. I consider this crayon-paper method an adjunct to, and not a replacement for the raised line kit.

By the way, when using the raised line board, I find it helpful to use one of those little clamp-like gadgets used to hold papers together at the end opposite the two clamps holding down the plastic "paper." Also, when I wish to keep a raised line diagram, I mount it on a sheet of braille paper with scotch tape. I've used the raised line kit in doing simple geometry, and for biology. My reader first copied a couple of diagrams on the Xerox machine; this copy was then laid on the raised line board, and the plastic film over the diagram; by heavily pressing the ball point pen, she was able to trace the diagram. This destroys the inkprint copy underneath, but it works.

An Interpointing Braillewriter?

About braille writers. I've used the old AFB model, the Perkins, and have the Lavender at present. It has always struck me as very odd that we can only use one side of the braille paper, considering that we should save on this expensive material, and there is a space problem. An interlining arrangement would add a few lines, but if it were feasible to provide for interpointing, this would be best. Also with the Thermoform system, it would be good if some way were found to put the braille on both sides of the plastic sheets which must be expensive to put it mildly. With my own notes, on 11 × 11½ braille paper, I use the smaller braille paper, the 8 × 11½ later in my braillewriter, and glue this to the back of the larger sheet, thus at least saving some space, making my notes less cumbersome.

I did a little experiment. I played one of the RFB open reel tapes at the 3 ips speed (it plays at 1⅞) and jumped cabled this to my cassette recorder. I then played the result at 15/16 on the Library of Congress cassette player. Though the sound quality could have been better, it came out all right. One should record at a fairly low volume to avoid distortion, and one can turn up the player and get good sound. I've also used my talking book's 33-1/3 rpm speed to put library records on cassette, and while this isn't Hi Fi, it comes out pretty good, much to my surprise, again using a jump cable.

At college, some chapters of the biology text were recorded as compressed speech. If it isn't too fast, it is quite intelligible, even on headphones in the library carrels. When I record from record to tape or tape to tape, I use a little loudspeaker (mounted in an old wooden cigar box) whose cord plug fits the earphone jack, and thus I can monitor nicely. Caution, the sound is lower than it would be through playback on the cassette speaker, and one must take this into account. But it is a handy way of doing things, and on playback, my cigar box speaker provides a fairly good tone quality, and it only cost five dollars. The cord goes through a small hole in the side of the cigar box, and a thin cardboard replaces the lid at the back of the loudspeaker, and an opening was cut in the bottom of the box where the speaker faces. Another thin piece of paper with holes punched in it covers this opening, and of course the cigar box sits on its side. The speaker is taped in place, and the cardboard taped on the back of the box.

Some sort of news letter should be provided whereby blind persons can exchange useful ideas on techniques of doing things, helpful devices they've rigged up, commercial items that might be helpful.

The new AFB *Ideas for Better Living* catalog has many things, as do catalogs from other organizations serving the blind. But some items are too expensive. For instance, while I did buy the Gooseneck Slate & Stylus, I decided to adapt an inexpensive compass for my raised line board. I bought an inexpensive screw-adjustable Sterling bow compass for a dollar, and was able to put a small, thin ball point compass on it where you normally put the pencil, and it works very well. I also use regular ball point pens for straight lines. The little Sterling templates are useful and one can feel the numbers and lines if one turns them over. You can't touch read these numbers because they are small, but you can feel them as "dots" and the lines between them. There are also inexpensive templates with ovals, squares, circles, etc., and ones for chemistry diagrams, which can be useful with the raised line board. These are available at five and dime stores, etc. Whether the "french curve" I heard about would be useful, I don't know, but I hear it costs about a quarter. For trigonometry and geometry, plastic triangles are available and cheap. All these would work with the gritty crayon and smooth paper system as well as the raised line drawing board.

Labels from Old Film

For durable braille labels, one can use old photographic film. A friend unhappily forgot to remove the lens cap or something and got a whole blank roll of 120 film for his trouble; he gave it to me and I have a good supply of celloid for braille labels. I tape these to whatever I'm labeling. I can either use a pocket slate or stick a piece in my braillewriter.

Another tip: if one makes a mistake on the raised line board, he can rub it down and cover the wrong line with the half inch wide clear tape and redo the line, even going across the tape with the ball point pen when making the correction. This saves doing it over on another plastic sheet and having to do the whole thing over. If one doesn't have the Goose Neck Slate and Stylus, he can turn the raised line drawing over and use a regular slate because he can feel where the lines of the diagram or drawing are on the back side of the plastic "paper." Naturally, one has to be careful when doing this so as not to write over the lines in the drawing.

Short Run Braille

The British innovation which "prints" the braille as plastic dots on regular inexpensive paper and on both sides of the page, through stencils like mimeograph ones, would seem to promise economy for volunteer organizations, a sort of alternative to Thermoform. Apparently, while "operating costs" are low, initial cost of equipment may be high for volunteer organizations. Also, possibly, the equipment could stand simplification. Yet, the production of inexpensive braille materials where "short runs" are the usual thing would seem inviting. The Thermoform sheet costs at least five cents and the braille is on only one side of the page, though it is durable and the braille reads well. Of course for "large run" books, interpoint press braille is still more economical. This of course applies to diagrams, maps, etc., too.

In writing braille, I add the British symbols not used in America where applicable, and also abbreviations familiar to regular inkprint usage. Grade 3 braille doesn't seem to be widely used, and braille shorthand seems to have limited application. Grade 2 seems to be the "in" thing. Now, while the omitted British symbols largely apply to "old English" and religious publications, a few would apply to everyday usage, such as the symbols for "grace," "holy," etc., "graceful dancer" with the "Gr" symbol followed by the "Ful" symbol, or "holy terror" with the "hl" symbol, being two examples. Most probably this is a matter for the AAWB and AAIB people to settle.

About typewriters. I wish there was an inexpensive gadget one could attach that would give a signal when one neared the bottom of the page. I've often written off the bottom! The SMC ribbon cartridge is a good idea, but unfortunately is limited to expensive electric models; but at least some blind people get the benefit of it. It is tricky putting in the old style ribbon, but a blind person can do it if he's patient.

I hope that Recording for the Blind will go entirely cassette. I have had the 15/16 ips tapes from the library, but these are the two-track kind, and apparently the GE player I have is not equipped for the four track versions. It would be useful if the various commercial companies at least provided 15/16 ips along with regular 1⅞ ips, especially since many use their recorders to take notes in class, etc. My recorder is the 1⅞, and I use one 60-minute cassette per class hour, though later the tape can be used over again, so I can rotate several tape cassettes.

For those who have large cartridge players, there are a couple of gadgets on the market allowing them to be adapted for cassettes as well, though again these adapters run only at 1⅞ ips. One is much like a regular cartridge in appearance, and you put the cassette in this, but of course you have to take the cassette out and turn it over to play the second side, but the device is fairly inexpensive.

A more elaborate and expensive device looks like the front end of a cassette recorder, has the drop in and cover, plus push buttons like any cassette recorder, and of course one can also record on this, but it costs about the same as a regular cassette recorder. The less expensive device merely plays cassettes, using the cartridge player's controls, and the more elaborate device both records and plays back. Yet, if a blind person has an eight-track stereo outfit, these devices do make it more useful.

Another arrangement would be helpful when an eight-track stereo outfit has recording facilities. If a person has a cassette as well, he can input from cassette to eight-track, with a jump cable from the cassette's earphone jack into the eight-track's mike jack for recording, and possibly playing the cassette through the eight-track, and of course visa versa.

Tactual Maps and Illustrations

On braille maps, diagrams, and other raised "illustrations," there should not be too much detail in a figure, nor should things be too small. The AFB map set I obtained a few years ago is good, for instance, in that a map is first embossed as a physical map and again as a political map. Some braille maps tend to have too much information together all at once. Though many of us formerly had sight, and the visual memory helps with various embossed illustrations, consideration must be given to those born blind and how they learn to "read" these raised illustrations, also how sensitive the human finger is, etc. Then, too, since most of these illustrations will be in braille books and pamphlets, the page size limits size.

With some braille texts, a raised inkprint symbol will appear in the text, and of course then the text can be printed only on one side, even in interpoint braille publications. That British plastic dot system of course would allow use of both sides of the page. And it probably works with the standard 11 × 11½ inch braille book page, too. And, I would imagine, the templates or "mimeograph masters" can be made by computer just as the plates for interpoint braille are made by typewriter hitched up to computer.

A practical help for both blind students and those who transcribe braille mathematics texts and other materials, would be a listing of the symbols used most frequently in arithmetic, algebra, geometry, and trigonometry. The Nemeth Code book probably includes these plus more esoteric symbols used in calculus, etc., and must be large, for it costs $18. My listing would be smaller, and should be available in both braille and inkprint. The braille copy should also contain raised inkprint equivalents of the symbols.

Elmer Lee Eveland
Binghamton, New York

Review

A Primer On Due Process: Education Decisions for Handicapped Children, by Abeson, Bolick, and Hass. Reston, Va.: The Council for Exceptional Children, 1975.

Reviewed by Barbara D. McGarry

"Due process," until a decade ago, was a phrase little understood and seldom used outside the legal community. In the specific area of handicapped children's education, the authors conclude that only in the past five years has the concept of due process been applied judicially to the rights of all children to an appropriate education. In this context, it is perhaps worth quoting the entire section, rather than the authors' excerpt, of the Fourteenth Amendment to the Constitution—simple, bedrock words indispensable in adjudicating the rights of all American citizens regardless of age, handicap, racial origin, sex, or religious belief: "All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

Equal Protection Under the Law

Inasmuch as all states have compulsory education laws for children, it would then seem that as much emphasis might be placed by the authors on the "equal protection" concept as on the "due process" interpretation, since substantive rights must be enumerated before procedural methods of implementing those rights can be discussed. Indeed, it is inescapably clear from judicial excerpts cited in the *Primer* that equal educational opportunity is the right of all children: "Children's rights cannot be secured until some particular institution has recognized them and assumed responsibility for enforcing them" (*Rodham*, 1973). "No authority is needed for the fundamental American principle that a public school education through high school is a basic right of all citizens" (*Cook v. Edwards*, 1972). "Stripping a child of access to educational opportunity is a life sentence to second-rate citizenship" (*Lee v. Macon County Bd. of Ed.*, 1974). And, finally, the long-neglected Supreme Court opinion expressed in the 1954 ruling of *Brown v. Board of Education*: "It is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity, where the state has undertaken to provide it, is a right that must be made available to all on equal terms."

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With over half of the states having tested these rights at the state court level within the past five years, resulting judicial decisions have followed the precedents quoted above. However, the authors cite instances in certain states where existing laws undercut the thrust of equal educational opportunity, excluding children who are blind, "dumb" or "feebleminded," or those whose "condition" produces a "depressing or nauseating effect on the techers and school children" (*Beattie v. State Bd. of Ed.*, Wisconsin Supreme Court, 1919).

Forms of Exclusion

The *Primer* also points out more subtle forms of exclusion, such as the use of tuition grant programs in most states, in which the parents must pay the difference between grant allowances and the actual cost of private tuition. Unfortunately, while the interconnection is noted between limited educational opportunity, poverty, and handicapping conditions, there is insufficient consideration given to procedures for correcting these handicaps, both physical and mental, which impede the child's potential for absorbing such opportunity. For instance, it might have been useful to recall the 1970 report of the White House Conference on Children confirming that while 10 percent of the fifty million school-age children had "moderate to severe" emotional problems, one out of every *three* children from poor families had "severe" emotional problems that required attention. In addition, this 1970 report found that while 11.2 percent of this country's population is black, a total of 40 percent of the ten million children under 17 years of age living in poverty are black. One must then wonder how many children of this total are represented in the "nearly two million children 7 to 17 years of age [who] were not enrolled in school," cited in a 1974 report of the Children's Defense Fund.

Poverty and the Handicapped

To this might be added the latest reported findings linking uncorrected handicapping conditions with poverty. On October 11, 1975, an investigating committee of the U.S. House of Representatives reported that nearly half the children of poor families need medical care, but most are denied even the free physical exams provided by law. According to this report, over 12.8 million such children are eligible for such care under federally aided, state-administered Medicaid law, but only 1.9 million have received physical examinations—of which, 39.6 percent received no treatment indicated by the examinations. Of the 5.8 million children in need of medical aid, the report estimates that 1.5 million of this total have vision problems; 650,000 have hearing problems; and 510,000 have iron-deficiency anemia. Under a 1967 federal law, states are required to provide free health services to children of families living below the officially designated poverty level. The failure of states to comply with this law can in no way be excused on the grounds of fiscal inability, since state operating budgets are currently reporting a surplus, as contrasted to the deficit operations of many large cities.

Admittedly, the *Primer* is not designed to consider handicapping conditions as they impinge upon the learning processes of children; it is simply, as its title implies, a procedural guideline "to provide education officials and policymakers at all levels of government with a short yet comprehensive package of practical information." To this end, it has provided a "how-to-do-it" framework, which includes the listing of superhuman qualities expected of a hearings officer assigned to resolve issues between the school and the child's family, and defining the role of a "parent surrogate" when a child's parents are unavailable or unknown.

Children As Chattel

The "parent surrogate" is perhaps the most challenging section in the entire presentation, as well as the most likely to meet resistance, when we recall the *parens patriae* founding principle of the juvenile courts, which have jurisdiction over 36 percent of our national population. The *Primer* fails to distinguish the role of the proposed "surrogate" sufficiently, in view of the juvenile court's customary authority to appoint a *guardian ad litem* for a child without parental protection in a particular purpose or suit. Indeed, the reader feels that the authors, in ignoring the whole question of possible juvenile court intervention, hope that somehow it will go away. It won't. Since its founding in 1899, the juvenile court system in America has operated on the principle, derived by implication from the old English law of "chattel" where children are viewed as possessions, that a minor is not entitled to liberty, but only to custody. Rooted in assertedly benevolent paternalism, this principle has come under increasing fire by legal activists concerned with the total lack of procedural safeguards, and lack of legal appeal, in the disposition of juvenile cases which may range from delinquency to neglect and dependency itself. In the last decade, a series of landmark cases—*Kent, Gault, Winship,* and *McKeiver*—have reached the Supreme Court, where the rights of juveniles have, for the first time, been the subject of that Court's rulings. In the 1967 *Gault* decision, for instance, valuable precedent was laid down for subsequent state-level decisions affecting minors: timely notice of charges; right to counsel; right to confrontation and cross-examination of witnesses; and privilege against self-incrimination. In *Winship*, the previous rule of "preponderance of evidence" was changed to the adult court's rule of "beyond a reasonable doubt." The implications of these rulings are profound when we consider the risk to a child's educational horizons by an arbitrary and capricious classification of his handicap.

The Rights of Handicapped Children

Left dangling and still unresolved are at least two issues raised by *Gault*: the right to a transcript of the proceedings, and the right to appellate review. While state courts have issued specific rulings on these two points (most notably, *P.A.R.C.* and *Mills*), the Supreme Court has pointedly overlooked them in the four cases involving the rights of minors.

Looming unanswered over such questions is also the most basic problem of all, inextricably bound up with the fundamental ability of the handicapped child to benefit from educational opportunities offered—the "right to treatment" concept. The best intended "mainstreaming" efforts to include a handicapped child in the educational process of his unhandicapped peers will be foredoomed to failure and frustration without a judicial determination at the highest level on this thorny problem, as an essential concomitant to equal educational opportunity. The "right to treatment" concept, termed "an enchanting legal fiction" by Yale Professor Jay Katz, has thus far been affirmed only in cases of involuntary commitment of adults to state mental institutions (e.g., *Rouse v. Cameron*, D.C. Cir., 1966, and *Wyatt v. Stickney*, M.D. Ala. 1971). Yet its implications are enormous for children classified—or misclassified—as "learning disabled," "educable retarded" or "trainable retarded." The sense of fundamental fairness, we all want to hope, is a basic ingredient of our national personality; and arbitrary and capricious methods of passing judgment on our fellow citizens should have no place in our society. This, then, is the real meaning of due process. As the late Supreme Court Justice Robert Jackson observed, "It is the best insurance for the government itself against those blunders which leave lasting stains on a system of justice."

Ms. McGarry is a specialist in governmental relations for the American Foundation for the Blind's Office of Governmental Relations, Washington, D.C.

More Light and Shadow, produced by the Sinai Hospital of Detroit. Sound, color, 16mm, 19 min.

Reviewed by Beth J. Phillips

Non-technical in nature, this public information film provides parents, prospective parents, relatives, friends, etc., with a general understanding of what is meant by low vision, low vision aids, low vision examination, and alerts them to the existence of specialized low vision clinics.

The film begins with common everyday scenes as seen by persons with normal sight. It then reminds us that some people are born with less than normal sight and that vision may be affected by disease or injury at any age. The film emphasizes that although vision is limited, there are many things that partially sighted persons can do, though perhaps a little differently or a little more slowly.

The narrator goes on to explain that after all possible has been done medically and surgically, there are aids and devices available which may enable a person to make better use of his residual vision. Samples of types of optical aids are shown, e.g. magnifiers, special glasses, CCTV. It is emphasized that after a careful examination these aids are prescribed to meet the individual's needs. Training in the use of the aid and a period of adjustment and development of confidence are required. Though only a small amount of improvement is gained, this can be very helpful.

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The remainder of the film is taken on site at Sinai Hospital's low vision clinic. It shows patients being interviewed and portions of low vision examinations: the doctor interviewing a young child and his parent, testing the child's vision; fitting a teenager with a monocular telescope so that he can see the blackboard; providing a multiply handicapped child with continuing care and encouragement; teaching an older person who has experienced difficulty in reading for six or seven weeks to use a prescribed aid and the remaining portions of his vision. In addition to optical aids, samples of non-optical aids such as signature guides, large type books and telephone dials are shown.

The film provides a good general introduction to what can be done to help the person with low vision. Although filmed at the Sinai Hospital clinic, it in no way implies that this is the only low vision clinic or place where low vision services are available.

Ms. Phillips is the project director, low vision services, American Foundation for the Blind, New York City.

Comment

A Proposal for the Use of Tape Records for Corrective Feedback in Blind Skill Training

Charles H. Wacker, Jr.

The Vocational Independence Program of the Foundation for the Junior Blind, Los Angeles, has been experimenting with audio tape recorders to provide corrective feedback to students and instructors in blind skill training programs with some promising data and results. The tape recorders are being used for in-depth evaluation of performance and attitudes in mobility training, communication skills, housekeeping, personal management and physical conditioning. Plans are currently underway to introduce them into some group therapy and discussion sessions.

A primary concern about bringing recorders into the learning situation was that of intrusion of privacy. Would the individuals involved in the taping sessions feel threatened or censored so that their responses would be artificial or controlled, thus negating the value of the feedback for learning evaluation? This proved not to be the case when the recorders were properly introduced. Each individual was told the purpose of the recorder, given an opportunity to experiment with it, and shown exactly where it was at all times. The students were assured that the tapes would be kept strictly confidential. The user was also shown how and given the opportunity to completely erase the contents of the tapes on which he or she was recorded

Why Tapes Are Effective

The reason for using tapes rather than only relying on live feedback is to furnish verbatim attitudinal and performance responses to the learner and instructor in the optimum environment. That is, the tapes can be played back in a quiet, undisturbed situation with the emotionalism of the incident removed from the minds of the listeners. Just as video tapes are used to show sighted individuals fallacies and barriers to learning, audio tapes can pinpoint weaknesses and areas of improvement for the blind student.

During the recorded exercise, tapes were made an integral, acceptable part of the teaching plan. Each person involved first attended a lecture on tape theory on the application of audio-visual equipment to learning. He or she was given many opportunities to familiarize himself or herself with the different kinds of equipment that would be used in the recordings, including the latest devices with built-in microphones, Every individual was encouraged to play with the recorder until he felt comfortable with it.

Conversational tones were rehearsed and the transitory nature of the recorded information was stressed by continually erasing it. The idea that the recorder was only incidentally there was emphasized. What it picked up would be evaluated; what it missed did not matter. The notion that once something is recorded it is there for all posterity was completely down-graded. Anyone reluctant to be recorded was automatically excused, but encouraged to listen while others were recording and, more importantly, while they were erasing. This usually had a favorable psychological impact on the person in doubt.

Learning Personal Management Skills

In the personal management class, feedback was provided on Students A, B, and C during a lesson on packing a suitcase. Each item to be packed was carefully folded by the instructor, then passed among the students who were asked to identify it. Each item was then placed in its proper location in the suitcase by the instructor, then by each of the students.

All three students verbalized an understanding of the task and its purpose, but only one student followed instructions and placed the items in their proper locations. When told of her mistakes, Student A rationalized her errors by stating that she understood the task, but simply wasn't thinking when she misplaced the items. Student C asked to have the placement of the items redemonstrated. She said that she understood the request, but wasn't sure of the left and right sides of the suitcase in terms of her and the teacher's point of orientation. When Student C was correctly oriented, she performed the task correctly. Student A continued to make the same mistakes and to verbalize understanding. When the tape was played back during a debriefing session, Student B, who performed the task correctly the first time, pointed out to Student A that perhaps her problem was also one of orientation. The highlighting of the orientation problem by tape feedback alerted the instructor to an important aspect of the packing process which she had overlooked, and the students to the reasons for their failure to perform correctly.

During a typing class, while the tape recorder was on, Student D got into a discussion with the instructor about his negative views about typing. His emphasis, which he reiterated in various ways during the conversation, was that he lacked patience and interest in typing. He used the words non-masculine several times in connection with the task. He claimed to be able to type 50 words a minute, but made a few mistakes, not because he didn't know the keyboard or grammar, but because his mind raced ahead of his fingers. When the instructor asked him to spell some words, he became annoyed and repeated vehemently that he really was disinterested in learning and wondered why the matter had to be pursued. He was a high school graduate and could spell as well as the next person. When she asked him to punctuate a sentence he gave her the same patronizing response, modifying it to the extent that if he were in doubt about grammar and spelling he would always know where to go to get the answers.

On playback of the recording, the instructor sensed the root of the learning problem in the word, "non-masculine." The student also commented on the word when he heard himself repeating it on tape. He said that he once had his own secretary who took care of all his clerical needs. Now he was afraid, if he ever wanted to work again, he would have to be one. Here was the basis of his learning hangup, which identified could now be worked on with his vocational counselor, and removed as a barrier to typing.

Improving Mobility Techniques

The tape recorder was used effectively in mobility training for Students E, F, and G. It was turned on at key points in the individual lessons, and on playback after the lessons, revealed the basis for errors in performances.

Student E was learning light business travel and performed satisfactorily on all assignments until she came to major intersection crossings. At the moment of step-off from the curb, she consistently froze. The instructor recorded her conversation just prior to and after the planned time to cross the intersection. Immediately preceding the crossing, the student's conversation was giddy and verbose, entirely unrelated to the thing she was doing. Her voice was high pitched and unnatural. In the background were the traffic noises and the cues for crossing. Abruptly, the student became silent. After a few seconds, when the sound of the traffic began to move in the opposite direction, she giggled, as though embarrassed, then stated that she missed the light again. When asked why she missed the light, she told the instructor that she was all set to cross, but the light changed too rapidly. However, after hearing herself on the tape—in the quiet of the instructor's office, away from the threatening situation—the student acknowledged her fear of the traffic, which was then able to be remediated.

Student F had a problem of losing his temper when he collided with obstacles or pedestrians, and blaming them for his own poor cane techniques. The tape recorder

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was turned on during one of these confrontations and later played back in the instructor's office. By this time, the student's anger and involvement in the incident were far enough removed so that he was able to listen objectively. He recognized the immaturity of his behavior, and was then able to work with the instructor in correcting the problem areas of his cane technique.

Student G's progress in mobility was above average, with no noticeable problems in attitude or performance. However, she asked to have the tape recorder used during various aspects of her training. She had been in the program three months and had mastered the basic concepts and directions for independent travel in all practical environments. She was now in the final stages of light business travel. Initially, it seemed as though little meaningful feedback would be provided by the tape. However, consistently during playback, it was revealed that the student's normally precise terminology became garbled and accelerated just prior to a major intersection crossing and high density traffic areas such as service stations and parking lots. This was contrapuntal to her seemingly flawless performance on these occasions. After listening to the playback the student spoke spontaneously about her nervousness at these critical times, which made the instructor aware of the psychological pressures building up in her from being confronted with these requirements each day. Also, the exhaustive nature of the lesson was emphasized by the fact that the student asked to be given a class that she would not have to worry about after her mobility lesson. The mobility instructor was able to work on alleviating the pressures of traveling in traffic and prepare the student for the more complex problems yet to come in heavy business travel. The student was also able to work independently on techniques which would increase travel skills and enable her to cope more effectively with these traffic areas.

To impress upon the students the way they sound to others on the telephone, Students H and I were recorded in telephone conversations asking for bus directions. H's speech was patronizing and showed impatience at having to wait for the information clerk. He asked several times for instructions to be repeated, but failed to say thank you after receiving the information. Student I, on the other hand, was relaxed, spoke softly, listened carefully, and in the background could be heard making notes of the conversation with the brailler. Both students were then asked by the instructor, with the tape still playing, to repeat the directions to her. Student I had no difficulty, but H failed miserably. He missed many of the transfer points, and was unsure of the times for the various buses. During this repetition, he complained of the difficulty in getting through to the information clerk, that the clerk talked too fast, and that he gave the directions as though he did not want to be bothered. When the instructor played back the recorded conversations, H recognized in himself the same characteristics he had attributed to the bus information clerk. He even went so far as to say that if he sounded like that, he wouldn't want to talk to himself.

Because of the initial success with the tape recorders, plans are now underway at the Vocational Independence Program to initiate a study to measure the effectiveness of the tape feedback technique for learning remediation.

Dr. Wacker is an educational supervisor at the Foundation for the Junior Blind, Los Angeles.

Two-Way Radio Communication as a Mobility Teaching Aid

Shelley Kashinsky and Wayne Kashinsky

The location of a mobility instructor in relation to a client during an outdoor lesson is affected by the lesson purpose and content, the safety of the area, and the competency of the client. To present a new task, the instructor is usually within normal-speaking distance of the client. As the lessons progress, this distance gradually increases. The amount of this increase, whether a few feet, across the street, a block away or more, is determined by the instructor. Problems may arise which complicate this decision such as unexpected obstructions, irregular traffic patterns, or interfering pedestrians. New surroundings or a difficult task may cause changes in the client's expected reactions making competency difficult to assess. While it is often desirable to be close to the client when problems arise, the instructor must also keep in mind the client's need to be a confident, independent traveler. Putting distance between the instructor and the client is crucial to this goal, and must be incorporated into any successful mobility program. Every mobility instructor must find his or her own solution to the challenge of being close to the client in case of danger, confusion or questions, but also far enough away to build confidence. A new method of dealing with this problem is the use of two-way radio communications using walkie-talkies. Such a system was recently tested at the Mount Carmel Guild's Archbishop Boland Rehabilitation and Training Center in Newark, New Jersey.

The client population of the program for the visually handicapped at the Center is composed primarily of multiply handicapped, blind people between the ages of 16 and 30. Four female, congenitally blind, and to varying degrees, mentally retarded, clients who were working on a route in the advanced residential-small business stage of mobility training were selected from this group to use the walkie-talkies. Two were totally blind, and two had partial vision.

Orientation to the Walkie-Talkies

The walkie-talkies tested were inexpensive, Citizens Band units with power under 100 milliwatts. FCC regulations allow devices of this type to be used without a license. The units incorporated a squelch circuit that eliminated static interference during non-talking periods. Other features included a two-channel switch to allow selection of a clear transmitting frequency, and a call button that produced a loud tone for use as an attention-getting signal.

An orientation lesson introduced the client to the walkie-talkie, pointing out the speaker, antenna, and transmit button. The clients were told to push the transmit button when they wanted to communicate with the instructor. Practice in holding and talking into the units was given before starting the actual route. During travel, the antenna on the client's unit was extended approximately two feet due to safety considerations. The instructor's antenna was fully extended, however, affording a communication distance of at least one block.

The walkie-talkies proved an excellent aid for staying in contact with the client while still maintaining a good distance from her. Through their use, clients were "talked through" such problems as getting lost in a parking lot, veering while crossing a street, and starting unsafe crossings. While it is recognized that it is often beneficial for clients to be allowed to make mistakes and correct them on their own, the walkie-talkies give the instructor the option of intervening without having to be at the client's side.

Positive Reinforcement

Prevention of errors is not the only benefit of the walkie-talkies. Two-way communication provides the ability to give immediate positive reinforcement or correction to the client. Thus, the client could be told instantly if she handled a crossing well, or if she had made a mistake. This immediate reinforcement has particular importance for the retarded client who may have limited verbal and retentive abilities, and may therefore have difficulty remembering and discussing the events of the lesson at the end of the session. All clients in this study demonstrated a greater ability to identify their errors, as well as their successes, when using the walkie-talkies than they had in previous lessons.

Other positive effects can be seen in the clients' reactions to the device. They stated that they felt more relaxed and safer with the walkie-talkies than when traveling without them. For the partially sighted clients, these benefits were coupled with a sense of being less independent than on previous lessons since they now had more verbal contact with the instructor. The totally blind clients, however, felt that they were more independent when using the units because they knew the instructor was always a full block away. Independence then, for these clients, was based not on the amount of verbal exchange, but on the proximity of the instructor during such contact. For the totally blind client who knows where the instructor is only by verbal interaction, this feeling is understandable.

Problems Encountered

Several problems arose during this project. The clients had a common misconception that the walkie-talkies could be used to call the police, and were to be taken along during their later independent travels. The use of the devices as training aids thus had

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LOW VISION: A Symposium Marking the 20th Anniversary of the Lighthouse Low Vision Service *edited by* **Eleanor E. Faye** *and* **Clare M. Hood**, *both of New York Lighthouse Low Vision Service, New York. Foreword by* **Wesley D. Sprague.** *(33 Contributors)* Divided into nine sections, this book covers special uses for lenses and non-optical aids, the new technology of lenses, recent medical and surgical advances, neuro-ophthalmological defects, special problems of the child, the vocationally bound adult and the elderly with limited vision. Models of low vision clinics and training in these clincs are discussed. *'75, 320 pp., 70 il., 9 tables, $19.50*

SO YOU HAVE CATARACTS: What You and Your Family Should Know (3rd Ptg.) *by* **Albert E. Sloane**, *Massachusetts Eye and Ear Infirmary, Boston, Massachusetts.* To allay the fears of the patient and to save the physician's time, Doctor Sloane presents here a narrative sequence of the natural history of a cataract from time of its onset until after surgery and its correction with glasses or contact lenses. The book is directed toward the person who would like to know the whole story, rather than the portion with which he identifies. Discussed are symptoms, hospital stay, necessary care, surgery and other aspects most likely to be questioned. *'75, 112 pp., 5 il., $6.50*

ORAL-AURAL COMMUNICATIONS (OAC): A Teacher's Manual *by* **Glenn Sheffield Leavitt**, *Michigan Rehabilitation Center for the Blind, Kalamazoo.* The first part of this book provides an introduction to OAC, including its history, its place in total rehabilitation, basic equipment, organization and presentation. The second part details the instruction of certain OAC skills for which special information and techniques are necessary including listening skills, speaking skills, using radios, telephones, talking book machines, cassette machines and open reel tape recorders. The book has been printed in large type on low-gloss paper. *'74, 136 pp., 9 il., cloth-$8.00, paper-$5.95*

LISTENING FOR THE VISUALLY IMPAIRED: A Teaching Manual *by* **Claudell S. Stocker**, *Kansas Rehabilitation Center for the Blind, Topeka.* Instructional materials are presented which evolved from a listening improvement project based on the premise that listening can be formally taught as a primary function through group experience. Three instructional phases are outlined: discrimination of likenesses and differences of sounds, unlearning rote listening, and use of other sensory modalities in listening. *'74, 192 pp., $7.75, paper*

THE CHANGING STATUS OF THE BLIND: From Separation to Integration *by* **Berthold Lowenfeld**, *Berkeley, California.* Four phases in the history of the socioeconomic status of the blind are described and documented: separation, ward status, self-emancipation and integration. In a review of the current scene of work with the blind in the United States, education, rehabilitation, public policy, attitudes, agency systems, self-organizations, economic forces and public assistance are evaluated according to their effects on the integration of the blind into society. *'75, 352 pp., 5 tables, $23.50*

BLIND CHILDREN LEARN TO READ (2nd Ptg.) *by* **Berthold Lowenfeld**, *Berkeley, California,* **Georgie Lee Abel**, *and* **Philip H. Hatlen**, *both of San Francisco State College, San Francisco, California.* This book reports on the present status of braille reading in local classes and residential schools for blind children, the characteristics of efficient braille readers and the methods of instruction which are likely to produce them. Among topics discussed are braille reading study, readiness for learning to read, the role of the teacher, securing needed books in braille and other reading media, and special problems in braille reading. *'74, 196 pp., 16 tables, $6.95, paper*

PHYSICAL EDUCATION FOR BLIND CHILDREN (2nd Ptg.) *by* **Charles E. Buell**, *California School for the Blind, Berkeley. Forewords by* **Genevie Dexter** *and* **James R. Bancroft.** A well-rounded program of vigorous physical education is described in this book including sports, games, contests, races and relays. With this book in hand even the most inexperienced teacher can conduct worthwhile physical activities for visually handicapped children. Here for the first time in printed form is a definite curriculum—a sound basis for the yearly, monthly, weekly and daily planning of physical education for visually handicapped children. *'74, 244 pp., 16 il., 19 tables, $7.95, paper*

YOUR EYES: A Book for Paramedical Personnel and the Lay Reader *by* **Thomas Chalkley**, *Northwestern Univ., Chicago, Illinois.* This simple, straightforward, uncomplicated book will be understandable to anyone who must deal with eye patients or problems of the eye. The author covers anatomy and physiology of the normal eye, optics, various eye diseases, their signs and symptoms, measures available to prevent specific diseases, and the therapeutic measures available. The material presented should not be too difficult for anyone with a high school education to comprehend. *'74, 136 pp., 15 il., $4.75, paper*

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to be stressed many times. The clients also had difficulty remembering to push the transmit button when they wanted to talk. A review on operating the unit was necessary on almost every lesson. These problems may be directly attributable to the intellectual level of these clients. The responses of other groups such as the adventitiously blind with average intelligence requires further research. It is expected that the benefits of increased safety and immediate identification of the client's successes or errors should apply to a wide range of blind clients.

Verbal interference on the walkie-talkie from other broadcasts was also a problem. While there was no difficulty identifying the instructor's or client's voice, the outside interference did at times provide an annoying and confusing background as the clients tried to concentrate on their routes. Efforts to solve these problems are continuing. A system currently under evaluation using voice-operated FM transmitter-receivers would allow simultaneous, interference free communication between the client and the instructor. This system would be even simpler to operate than the current walkie-talkies due to its "hands-free, no-buttons-to-push" operation. As this new system is developed, and other populations tested, it is hoped that two-way radio communication of some type will become an accepted training aid for mobility instruction.

Ms. Kashinsky is an orientation and mobility specialist at Mt. Carmel Guild, Newark, New Jersey, and Mr. Kashinsky is a biomedical engineer at Douglass College, Rutgers University, New Brunswick, New Jersey.

Current Literature

A report of significant new additions to the Migel Memorial Library of the American Foundation for the Blind, prepared by Elaine M. Siegel, librarian.

Social Services for Persons Who Are Blind; A Guide for Staff in Departments of Public Social Services, by Sarah A. Butts. U.S. Social and Rehabilitation Service, Community Services Administration (copies available from: SRS Publications Distribution Center, Room G-115-B, HEW Mary E. Switzer Building, 330 C Street, S.W., Washington, D.C. 20201), 1975, 44p. Free. Eligibility for, and an enumeration of, the various types of financial aid, medical, remedial, vocational, and rehabilitation care and services available to the blind from the government are presented. Separate chapters focus on the child, the young adult, and the elderly.

The Wagner-O'Day Act Program; How To Join It. The President's Committee on Employment of the Handicapped (Washington, D.C. 20210), [1974], 11p. Free. This pamphlet summarizes the background and content of the Wagner-O'Day Act of 1938 and the additional provisions of Public Law 92-28, 1971, which established the Committee for Purchase of Products and Services of the Blind and Other Severely Handicapped. Appended is a list of the seven nonprofit agencies which regulate the inclusion of individual workshops in the program.

Volunteers Who Produce Books; Braille, Large Type, Tape. Library of Congress (Division for the Blind and Physically Handicapped, Washington, D.C. 20542), 1973, 65p. Free. This directory updates the 1970 edition, and offers a listing, arranged by state and subdivided by city, of all volunteer groups providing materials for the blind in the various formats. An index to organizations specializing in the production of foreign language, music, and mathematics materials is also included.

The Role of Occupational Therapy with the Visually Handicapped, by Judy Potts. *Candian Journal of Occupational Therapy* (4 New Street, Toronto, Ontario, Canada), Vol. 42, No. 1, Spring 1975, pp. 21–24. The author, an occupational therapist, presents statistics pertaining to the visually handicapped population of Canada. The therapist's involvement in teaching the use of specific techniques and aids for activities of daily living is described.

The Pied Piper of Ridgewood, by Glynn Steele. *The Lion* (Lions International, York & Cermak Roads, Oak Brook, Illinois 60521), Vol. 57, No. 10, April 1975, pp. 24–27. Story of the Music Foundation for the Visually Handicapped, Ridgewood, New Jersey, founded by Dick Fieldhouse and currently maintained by the New Jersey Lions Clubs. Staffed by volunteers, the Foundation provides individual and group instruction, large-type sheet music, and some instruments for blind music students of all ages.

Art Teaching for the Blind, by D. Sinclair. *Teacher of the Blind* (Royal School for the Blind, Church Road North, Wavertree, Liverpool L15 6TQ, England), Vol. 63, No. 3, Spring 1975, pp. 65–72. The author discusses two basic thrusts of art teaching—as a vocational subject comprised of specific skills, and as a vehicle for teaching other subject content or concepts. The article explores such diverse functions of art for the blind as therapy, as reinforcement of tactile memory, as a means of developing manipulatory skills, as a way of developing imagination and sensitivity, and as a mode of expression.

Mobility Aids for the Blind, by Howard Freiberger. *Bulletin of Prosthetics Research* (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402), BPR 10-22, Fall 1974, pp. 73–78. The author, an electronics engineer with the Veterans Administration Research Center for Prosthetics, pinpoints areas in need of improvement and additional technological research in the mobility services provided for the blind by the Veterans Administration. He also focuses attention on such aids as the Laser Typhlocane, Binaural Sensory Aid, Lindsay Russell Pathsounder, Mowat Sonar Sensor, and Mims Seeing Aid.

New Approaches to Mobility Training, by J. K. Holdsworth. *The New Beacon* (Royal National Institute for the Blind, 224 Great Portland Street, London WIN 6AA, England), Vol. 59, No. 697, May 1975, pp. 116–122. The author, Director of the Royal Guide Dogs for the Blind Associations of Australia, presented this paper at the Fifth General Assembly of the World Council for the Welfare of the Blind, August 1974, Sao Paulo, Brazil. He traces the development of mobility services in Australia, with specific emphasis on the incorporation of existing general and specialized community resources into the service network for the visually handicapped.

Adapting Science Material for the Blind (ASMB): Expectation for Student Outcomes, by Marcia C. Linn and Herbert D. Thier. *Science Education* (John Wiley & Sons, Inc., 605 Third Avenue, New York, New York 10016), Vol. 59, No. 2, April-June 1975, pp. 237–246. The article analyzes the results of classroom-based studies of "Adapting Science Materials for the Blind." ASMB is an adaptation of the Science Curriculum Improvement Study, a sequential, ungraded physical and life sciences program for sighted elementary-age students. Testing showed that use of ASMB fostered improvement in concrete, manipulative, and process skills.

Vision Screening of School Children: Time For A Change? by Arnold Sherman. *Optometric Weekly* (Professional Press, Inc., 101 East Ontario Street, Chicago, Illinois 60611), Vol. 66, No. 30, September 4, 1975, pp. 817–819. Advocated is a complete vision examination, performed by an optometrist or ophthalmologist, for each child prior to entering or returning to school. Optimum vision screening, which theoretically could be accomplished within a 15-minute session, would evaluate vision acuity, fusion ability, ocular-motor control, form perception, refractive error, and general eye health.

If You Could See What I Hear, by Tom Sullivan and Derek Gill. Harper & Row Publishers, Inc. (10 East 53rd Street, New York, New York 10022), 1975, 184p. $7.95. Full-length review appeared in the November issue of the *New Outlook*.

Sun Harvest, by Susan Zinkhan. Carlton Press (84 Fifth Avenue, New York, New York 10011), 1975, 47p. $3.75. Collection of poetry by blind poetess, who also teaches a correspondence course in verse composition to blind poets.

ADDITIONAL LISTINGS

A classified listing of books, articles, directories, pamphlets, and other material of interest to the readers of the New Outlook for the Blind, *prepared by the editor. Please write to the source listed in each entry if copies or more information is desired; the materials are not available from the* New Outlook *or the American Foundation for the Blind.*

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Aging

Aging in American Society: An Examination of Concepts and Issues, by James D. Manney, Jr. The Institute of Gerontology (University of Michigan—Wayne State University, 543 Church Street, Ann Arbor, Michigan 48104), 1975. 231 p. $3.95. Provides a broad overview of the major concepts in aging including the physiological and psychological changes, the social situation of the aging population, and the policies and programs directed at that population.

Attitudes and Adjustment

As Others See Us: Attitudes of Physically Handicapped and Normals Toward Own and Other Groups, by Ronald C. Comer and June Allyn Piliavin. *Rehabilitation Literature* (National Easter Seal Society, 2023 W. Ogden Avenue, Chicago, Illinois 60612), July, 1975, Vol. 36, No. 7, pp. 206–221, 225. Using three groups of subjects—physically normal, recently disabled, and long-term disabled—this study attempts to determine the attitude of each toward physically normal and handicapped people.

Deviants as Active Participants in the Labeling Process: The Visibly Handicapped, by Teresa E. Levitin. *Social Problems* (Rebecca B. Aurbach, 114 Rockwell Hall, State University College, 1300 Elmwood Avenue, Buffalo, New York 14222), April 1975, Vol. 22, No. 4, pp. 548–557. The author explores the active role of the physically handicapped in influencing attitudes by defining themselves as "deviant."

Barriers to Normality for the Handicapped Adult in the United States, by Leslie D. Park. *Rehabilitation Literature* (National Easter Seal Society, 2023 W. Ogden Avenue, Chicago, Illinois 60612), April 1975, Vol. 36, No. 4, pp. 108–111. Normalcy includes the dignity of risk. According to the author, handicapped people must be able to take risks and experience a multitude of life situations if they are to overcome the barriers that society has placed before them.

About Handicaps: An Open Family Book for Parents and Children Together, by Sara B. Stein, illustrated by Dick Frank. Walker and Company (720 Fifth Avenue, New York, N.Y. 10019), [1974]. $4.50. Two interleaved texts—one for children and one for their parents—form this book. Both accounts deal with the way individuals can overcome their fears of people who are different from them.

Consumer Involvement

Let Our Children Go: An Organizing Manual for Advocates and Parents, by Douglas Biklen. Human Policy Press (P.O. Box 127, University Station, Syracuse, New York 13210), 1974. 144 p., illus. $3.50. A manual for action, this book describes how parents of handicapped children and their allies (not necessarily professionals) can organize to change human service agencies and assert the rights of the handicapped.

Diabetes

Counseling and Rehabilitating the Diabetic, edited by John G. Cull and Richard E. Hardy. Charles C Thomas (301–327 E. Lawrence Avenue, Springfield, Illinois 62703), [1975]. 152 p. $6.95. General information about the effects and demands of diabetes is presented, including the psychological and rehabilitation aspects, personal reactions to the disease, care and diet for diabetic children, youth program counseling services, and case study materials.

Education

The Digest of Educational Statistics. Copies available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. 1974. $2.50. This book provides an abstract of statistical information covering the broad field of American education from kindergarten through graduate school. It also gives an historical perspective of American education through a series of charts extending as far back as 1870.

Films

Shelley. University of British Columbia, Department of Paediatrics and the Canadian Institute for the Blind (350 East 36th Avenue, Vancouver, B.C. U5W 1C6, Canada), 16 mm, sound, 20 minutes. $100.00. The film follows Shelley, a congenitally blind child, from ten months to six years old, showing how her parents encouraged her development in the same sequence and rate as a sighted child.

A Child Is a Child. Instructional Media Services (P.O. Box 1010, Hollywood, California 90028), 7 min. Color. Sale, $115; rental, $20. This film shows children with handicaps integrated with non-handicapped children in the preschool laboratory at California State University, Northridge.

Assessment. Alabama Rehabilitation Media Services, 16 mm. Color. 26 min. (Distributed by Materials Development Center, Department of Rehabilitation and Manpower Services, School of Education, University of Wisconsin-Stout, Menomonie, Wisconsin 54751.) Purchase: $150; rental: $10 for three days, $12 for five days. Describes five techniques of vocational evaluation currently being used in rehabilitation programs: psychological testing, work samples, situational assessment, job analysis and job tryout.

Public Education

Guidelines for Producers and Distributors of Educational Films. Consortium of University Film Centers (% Visual Aids Service, University of Illinois, 1325 South Oak Street, Champaign, Illinois 61820), 1975. 23p. $2.00. Includes information on preparing the film for sale, finding the prospective audience, and methods of smoothly handling orders.

Rehabilitation

Adjustment Services in Rehabilitation: Emphasis on Human Change, by R. Baker and H. Sawyer. Auburn University, Alabama, 1971. (Copies available from Materials Development Center, School of Education, University of Wisconsin-Stout, Menomonie, Wisconsin 54751). Examines concepts of adjustment presently being used in rehabilitation facilities and recommends guidelines to help facility personnel develop adequate adjustment programs based on the clients and available resources.

Social Problems

Corporate Responsibility for Social Problems: A Bibliography. Bank of America (Editorial Services, P.O. Box 37000, San Francisco, California 94137), 1975. 78p. $2.00. This bibliography cites recent articles, books, pamphlets, company and organization reports, special studies, and speeches that deal with the impact of current social problems in business and society and the corporate responses to these problems.

Statistical Surveys

Americans Volunteer 1974. Action (Washington, D.C. 20524), 1974. Action pamphlet 4000-17. Data is based upon a Census Bureau Survey conducted in April, 1974, which is compared with a 1965 survey. Results indicate that 37,000,000 Americans have engaged in volunteer activities; 24 percent of the over 14 years of age population did volunteer work in 1974, whereas 18 percent did in 1965.

Vocational Rehabilitation

Program Evaluation: A Resource Handbook for Vocational Rehabilitation, by Carol Bennett and Marvin Weisinger. ICD Rehabilitation and Research Center (Research Utilization Laboratory, 340 East 24th Street, New York, N.Y. 10010), 1974. $5.00. A resource handbook which presents a practical overview of program evaluation approaches, methods, and techniques. Includes a list of indices, bibliography, and reading list.

Welfare

Welfare Medicine in America: A Case Study of Medicaid, by Robert Stevens and Rosemary Stevens. The Free Press (866 Third Avenue, New York, N.Y. 10022), [1974]. 386p. $13.95. In 1965 Congress passed the bills for Medicare and Medicaid. A decade later, the authors of this book have probed into the confusion, injustices, wastefulness, and swindles surrounding the reform legislation. However, they do see Medicaid as the forerunner of a comprehensive national health care program and consider it "...the essential chaos which precedes and precipitates major legislative reform."

News in Brief

- The Lighthouse, New York Association for the Blind, plans to establish a formal training center for low vision personnel. The new center will be under the direction of Eleanor E. Fay, M.D., FACS, ophthalmological director of the Lighthouse Low Vision Service, and Clare M. Hood, R.N., M.A., administrator of the Service. The program will include the instruction of low vision assistants as well as expanding the continuing education program for ophthalmologists and optometrists.

- The Ohio Rehabilitation Services Commission has approved a $396,170 grant to initiate radio reading services for blind and visually handicapped residents of the greater Cleveland and Columbus areas. The Columbus city council has already made arrangements with WOSU-FM, the Ohio State University station, to broadcast on their subsidiary communications authorization (SCA) band.

- The Library Art Center of Newport, New Hampshire organized an exhibition of tactile art for the blind and visually handicapped which will tour in New Hampshire throughout 1976. Entries for the exhibit were selected by a jury consisting of both blind and sighted persons. This exhibition will be shown in hospitals, nursing homes, schools, and public galleries throughout the state.

- Two new Spanish-language pamphlets have been published by the Library of Congress, Division for the Blind and Physically Handicapped (1291 Taylor Street, N.W., Washington, DC 20542). *Libros Parlantes* is the second edition of the catalog of Spanish-language materials distributed by DBPH and includes all titles produced prior to July 1975. *La Lectura para Todos* is a translation of the pamphlet, *Reading is for Everyone*, which explains the criteria and process for becoming a member in DBPH's lending library program.

- The Art Theatre Collective and the Chicago Lighthouse for the Blind have combined efforts to develop a theatre arts program for visually impaired persons. The group's first production, "The Miracle Worker," gave its opening performance October 3, 1975.

- Plans are underway at the Social Security Administration to initiate a "direct deposit" program. When this program is put into effect any social security beneficiary can elect to have his check deposited directly in his account in any bank, savings bank, savings and loan association, or federal or state chartered credit union.

- The Idaho State School for the Deaf and the Blind formally dedicated the new classroom building of the school for the blind in ceremonies September 23, 1975.

- The American Association for the Advancement of Science (AAAS) has launched a "Project for the Handicapped in Science." The purpose of this initial project, which is funded by the Rehabilitation Services Administration of the Department of Health, Education and Welfare through the George Washington University Rehabilitation Research and Training Center, is to identify and explore barriers to the full participation of physically disabled persons to education and employment in science. Specifically, the project will examine and evaluate ways in which scientific professional associations and organizations of and for the handicapped can contribute to equal opportunities in science careers.

  Disabled scientists, who have experienced difficulties in receiving an education or professional placements because of their handicap, are asked to relate them to Martha Redden, Director, Project on the Handicapped in Science, Office of Opportunities in Science, AAAS, 1776 Massachusetts Avenue, N.E., Washington, DC 20036.

- A typing course for beginners, *Basic Introduction to Typing for the Visually Handicapped Student,* has been compiled by Billie Taylor. The course covers the keyboard, simple manuscript typing, personal and business letters, addressing envelopes, and sentences for one-minute timings. The complete kit contains 12 cassettes, a teaching manual and a compact head set. The course, priced at $69.95, can be ordered from Sped Publications, 2010 Eagle View Drive, Colorado Springs, Colorado 80907.

- The French journal, *Readaptation,* has published a special issue containing the papers presented at the World Council for the Welfare of the Blind International Congress for the 150th Anniversary of the Braille System. It is available in French only, from Readaptation, 10 rue de Sevres, 75007 Paris, France, at F.6 per copy.

- The World Council for the Welfare of the Blind has announced that its next executive committee meeting will be held in Riyadh, Saudia Arabia in March 1977. The location for the 1979 general assembly meeting is now under consideration.

- MediCab International (1523 Central Park Avenue, Yonkers, New York 10710) is an organization that provides transportation to non-ambulatory handicapped individuals. The company's services are used primarily for transportation to medical facilities, but can also be used to go to school, work or recreational activities. There are presently ten licensed MediCab companies operating throughout the country and more are expected to open in the near future.

- The United Nations Educational, Scientific and Cultural Organization (UNESCO) is presently studying the possibility of publishing a biennial braille magazine containing articles in the fields of education, science, culture and communications. The magazine would be published in English, French and Spanish, with subscriptions available free of charge to blind individuals throughout the world. For further information write, Mr. F. H. Potter, UNESCO Visitors' Information Centre, UNESCO House, 7 Place de Fontenoy, 75700 Paris, France.

- The President's Committee on Employment of the Handicapped cited American book publishers as among the greatest supporters of the national effort to increase the acceptance of handicapped people into the mainstream of society. The Committee pointed out that in addition to the usual method of producing books by and about handicapped individuals who have surmounted their disabilities, publishers are now also showing people with handicaps in a wide range of situations and activities.

APPOINTMENTS

- Library of Congress, Division for the Blind and Physically Handicapped: **Ellen Zabel,** assistant chief for network development.

- Veterans Administration, Department of Medicine and Surgery: **Paul A. L. Haber,** assistant chief medical director and coordinator of geriatric programs.

- National Technical Institute for the Deaf, new members of the National Advisory Group: **Laura M. Bergt,** Fairbanks, Alaska; **Alice R. Kent,** Cleveland; **Robert Huff,** Blacksburg, Virginia; and **George Propp,** Lincoln, Nebraska.

- American Foundation for the Blind: **Milton Kaye,** manager, aids and appliances division.

- National Labor Council of International Guiding Eyes: **George Meany,** honorary chairman.

AWARDS

- Major General Melvin J. Maas Achievement Award, Blinded Veterans Association: **Michael W. Johnson,** drill press operator, Milwaukee, Oregon.

- American Academy of Ophthalmology and Otolaryngology Lay Awards: **Gladys O. Thompson,** former Academy office manager, and **George Werntz, Jr.,** former executive vice president of Seeing Eye, Inc.

DEATHS

- **Ishbel Ross,** biographer and novelist, author of *Journal into Light: The Story of the Education of the Blind,* in New York City, September, 1975.

COMING EVENTS

December
17-20 American Public Health Association, National Round Table Conference, New Orleans.

1976
February
1-7 Canadian White Cane Week.
8-11 Council for Exceptional Children, Conference on Right to Education/Placement of Exceptional Children, New Orleans.
29-March 3 Council on Social Work Education, Annual Program Meeting, Philadelphia.

March
3-7 American Orthopsychiatric Association, Annual Meeting, Atlanta.
28-April 2 Second International Congress on Prosthetic Techniques and Functional Rehabilitation, Cannes, France.

April
4-9 Council for Exceptional Children, 54th Annual International Convention, Chicago.
5-9 European Congress of Ophthalmology, Hamburg, Germany.
9-13 American Occupational Therapy Association, Mid-year Meeting, Atlanta.

May
7-10 American Board of Ophthalmology, Philadelphia.
14-16 American Ophthalmological Society, Kilauea, Hawaii.
16-20 American Federation of Labor and Congress of Industrial Organizations, 18th National Conference on Community Services, Washington, D.C.

Classified Listings

Rates: Non-display—$2.00 per line (minimum: $10.00); Display $13.00 per column inch (minimum: one inch). Anonymous, box-numbered ads are only accepted for personnel listings. Advertising is subject to editorial approval. A rate and information card is available on request. All correspondence should be directed to the Classified Advertising Department, New Outlook for the Blind, *15 West 16th Street, New York, N.Y. 10011.*

AIDS AND APPLIANCES

Electronic calculator with audio-coded display. Designed for blind. For information write to TEKPRO, 6813 North 29th Avenue, Phoenix, Arizona 85017.

PERSONNEL

Situations Available

Executive Director. The Vision Center of Central Ohio, Inc., is seeking an Executive Director. The Vision Center is a rehabilitation agency for the blind and visually handicapped, having a personal adjustment and general evaluation program, a community service program, and a sheltered workshop. Candidates must have a Master's degree and at least five years of administrative experience. Experience in community agency administration, fund-raising and rehabilitation will be preferred. Salary and fringe benefits are excellent. Expectations of the Board are high. Write and/or send resume to: Mr. William Browne, Chairman, Search Committee, Vision Center of Central Ohio, 1393 North High Street, Columbus, Ohio 43201

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VOLUME 69, 1975

Compiled by Audrey C. Gilmour

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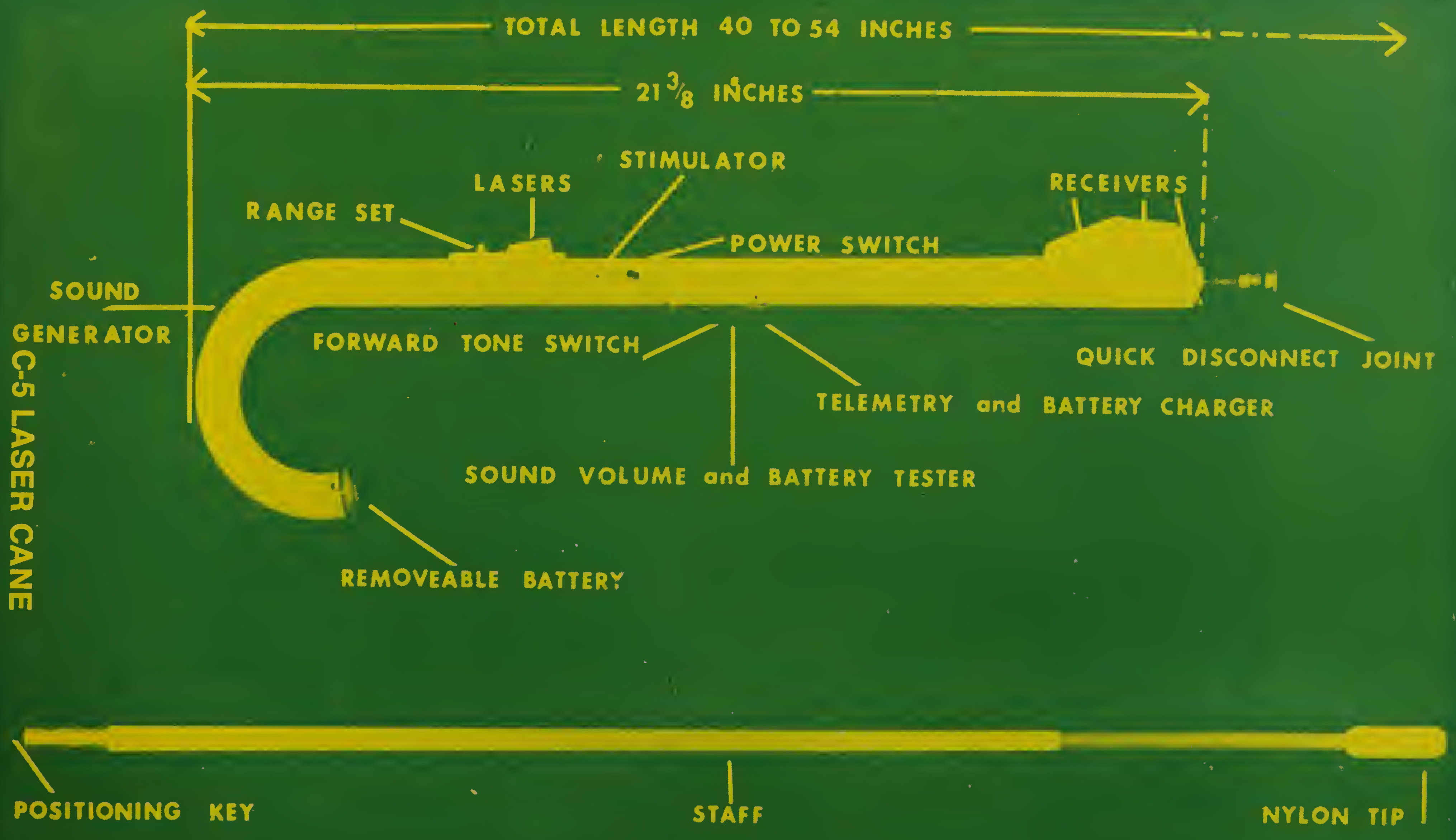

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